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PREFACE

During the years 1921-22 the writer was privileged to give a number of lectures at the State Universities of Michigan, Iowa, Nebraska, and Kansas and also before the Anthropological Society of St. Louis and the Galton Society of New York, which lectures, at the suggestion of the Editor of this series, were elaborated into the accompanying volume. The object of these lectures was to present the problems and scope of contemporary anthropology, and recognizing that the most pertinent question before us as a people, is the relation of civilization to man, the emphasis in these pages has been placed upon culture and its biological background. Consequently the reader will find here little that is original or new, the effort being to interpret the concrete data of anthropological research rather than to develop new lines of inquiry. Yet, the writer hopes that as formulated these statements will be suggestive of new leads in research and thus add a mite to the factors that make for progress. But for whatever merit there may be in the subject-matter of this book, acknowledgment is made to the American Museum of Natural History in New York for many research facilities and also to the National Research Council of Washington, D. C., under whose auspices were given the University lectures noted above.

In addition the writer feels under personal obligations to many, among whom, first of all, he is indebted to President Henry Fairfield Osborn of the American Museum of Natural History in New York for inspiration and scientific counsel; secondly to his assistant, Miss Bella Weitzner, who because of great familiarity with the

subject-matter involved, coupled with extensive editorial experience, rendered invaluable aid; further, to Mr. S. Ichikawa for the illustrations; and lastly to the members of the Galton Society for many illuminating suggestions.

CLARK WISSLER

March, 1923.

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EDITOR'S NOTE

THE present volume represents the first serious attempt, so far as we know, to identify and relate in a comprehensive system the processes of human culture and the factors operative therein. It is to be hoped that this enterprise, so much needed and so admirably prosecuted at Dr. Wissler's hands, will be shared in by other investigators, and a well-rounded science of the subject developed. In the meantime the book should appeal to students of sociology, ethnology and other social sciences who are attempting to understand the phenomena of, and the moving forces in, culture and their significance for the understanding and practical treatment of the difficult social problems now confronting the world.

S. E.

INTRODUCTION

MANY divisions of knowledge have a long and venerable history so that their subject-matter is as well formulated as folklore, and thus their forms of presentation bear the touches of innumerable masters. So, if one sets about the making of a new book upon such time-honored subjects as botany, geometry, geology, etc., the approaches are direct and simple. The reader, also, needs but the title to orient himself and thus be ready to follow. Unfortunately, the subject we are now facing is not one of this kind, for no one has as yet fully blazed the trail for us. The data for its synthetic treatment are to be found in special reports and technical discussions, such as original investigators leave behind them. Hence, there is no traditional mode of approach to guide the author, nor will the title bring to the mind of the reader the ideas and experiences necessary to the proper setting. While it is true that many of the facts cited will be familiar we are about to look at them in new ways, for though everyone is born, lives, and dies in a culture, but few are ever aware of it. So we are to attempt the difficult feat not only of seeing the medium in which we live, but also, of seeing ourselves in culture.

As a preparation for the analytic part of this task we shall try to present the point of view by rambling about among mankind and taking stock of our own culture setting. We shall then be somewhat better prepared to systematize and define the phenomenon itself. Finally, with the understanding thus obtained, we shall seek the hidden relations between culture and ourselves.

MAN AND CULTURE

PART I

THE MEANING OF CULTURE

CHAPTER I

THE COMPARATIVE POINT OF VIEW

One of the first difficulties in the way of comprehending the significance of the term, culture, lies in the custom of using it in a sense of evaluation, as when we refer to a man of culture. Thus, by a person of culture we sometimes understand one who is educated and polished in manners, or perhaps highly skilled in art or music. As thus applied, the term means superiority; but this use has little in common with its meaning when applied to a people as a whole, for in history and social science we speak of the mode of life of this or that people as their culture. Thus the Eskimo and Hottentot have no less each a culture of their own, than the French or the English. In fact, in contrast one to the other, the Eskimo and Hottentot have far greater claims to originality in culture than have the English when pitted against the French. This is because the whole round of life in England is not very different from that to be observed in France, whereas the life cycle of an Eskimo has very little in common with that of a Hottentot. This round of life in its entire sweep of individual activities

is the basic phenomenon to which the historian, the sociologist, and the anthropologist give the name, *culture.*

We say that the Eskimo has a culture of his own because, from almost whatever angle we view his daily activities, we see new and surprising practices not to be found among other groups of people. Thus, he lives in a snowhouse, uses a peculiar boat called a *kayak,* rides upon sleds drawn by dogs, heats his houses with seal oil lamps, wears fur clothing of peculiar styles, etc., etc. Likewise, his methods of greeting strangers, his ideas of hospitality, beliefs concerning the heavenly bodies, ethical ideals, standards of beauty, methods of checking crime, training the young, etc., are peculiarly different from those found among other peoples. In view of all this, we say that there is an Eskimo culture and that it belongs to the people we call the Eskimo.

A little reflection will show that this phenomenon we call Eskimo culture is a great complex embracing the whole round of life in the Arctic. To enumerate all its details is practically impossible.[1] For example, in such a practical matter as the building of a snowhouse a respectable volume would be filled before one would have recorded all the rules, conceptions, precautions, social aspects, etc., that must be comprehended by the Eskimo house builder, but this whole, large as it is, is only one infinitesimal item in the total culture complex of the Eskimo. So a complete record of such a culture would record in full their arts, industries, amusements, politics, family life, education, religion, etiquette, etc. Fortunately, it is not necessary that we gather or comprehend all the details of such a culture complex before we can sense its reality, or even form an idea of its character.

[1] For an intimate acquaintance with many phases of Eskimo culture, see Stefansson, *My Life with the Eskimo;* also Chapter I in Goldenweiser's *Early Civilization.*

For readable appealing sketches of American Indian cultures, see *American Indian Life,* edited by Elsie Clews Parsons.

What we really do is to note some of the most distinctive or original characteristics and upon this basis assume a distinct culture. Thus one need not observe the Eskimo long before it will be apparent that the earmarks of a new culture are in evidence. These marks are such objective things as styles of clothing, houses, and methods of securing food. But it may be asked, what right have we to assume a different culture from mere outward differences of this kind? Thus, it will be objected that culture is the sum and substance of the thoughts and beliefs of a people, and that these are in reality the determining characteristics of cultures, according to which they may be pronounced alike or different, as the case may be. As we shall see over and over again, it *is* a core of ideas and beliefs, actuating a people and in a large measure controlling their career, that forms the backbone, or at least the unifying element, in the culture-complex; but our experience with the peoples of the world indicates that whenever we find sharp contrasts in such homely and outward affairs as housing and feeding, we are certain to find equal, if not even sharper contrasts in beliefs, social ways, ideals, ethics, and in fact all mental attitudes toward things of whatever sort. Without pausing then to consider the significance of this simple fact—the average man probably takes it as a matter of course—we may take it for granted that wherever there are sharp differences in peoples as to such fundamental necessities as housing, clothing, and feeding, there will likewise exist differences in belief and ideals, so great and having so much originality of form, that the whole life complexes of these peoples must be taken as distinct cultures.

Before going too far with this discussion of the objective characteristics of culture, we should face about and ask, if we ourselves have a culture of our own. It will be quite impossible for us to get so far outside of this manner of life of ours, as to see it as an Eskimo

would, but still a little exercise of the imagination will give us a fair idea of his reactions. Suppose an intelligent Eskimo, bent upon travel and the discovery of new peoples, should arrive suddenly in our midst; after looking us over, he would, upon returning to his Arctic home, characterize our culture by our curious box-like houses of wood, stone, and glass, which we heated by burning wood and coal in iron kettle-like enclosures; our lack of fur clothing; our great variety of food which we traded for at a market with pieces of metal and paper; our wheeled vehicles; our appliances for carrying the voice to great distances; our fondness for moving picture exhibitions; our foolish superstition over the number thirteen, and the strong taboo against hair in food; the curious custom of women taking a new name when married; the perpetual smoking of tobacco in rolls and tubes of paper by the men and almost ceaseless chewing of gums by the ladies; the highly colored face paintings of fashionable women, etc. Without considering the many other items the imaginative reader can add to this list, it is plain that any wideawake Eskimo would instantly recognize a new culture. In fact, one of the great values to be derived from the study of different peoples, is the attainment of a perspective, or a horizon, from which we begin to see our own culture from the outside. The objects and scenes of our daily lives look natural and consequential only because we have seen little else; if we can once break up this monotony, by looking long and attentively at a different order of life, even our own will begin to appear as queer and amusing. To come to the point then, we ourselves do have a culture which can be characterized by certain obvious traits, and which, when viewed from the outside, is made up of things and fancies just as queer looking and seemingly as senseless, as those of the most despised peoples of the earth.

DOMINANT CHARACTERISTICS OF OUR CULTURE

A little reflection will show how difficult it is to keep all the details of American life before one's mind long enough to select the dominant characters. One way to arrive at a possible formulation of them is to enumerate those we expect to meet in every American village. Thus, no matter where we go in this land of ours the towns will manifest cycles of activities associated with such concepts as wheel, plough, grain, cattle, horses, cotton, steam, electricity, explosives, gasoline, automatic machinery, printing, iron and steel, photography, alcohol and tobacco, trade, schools, churches, universal suffrage, and community control. While this is not a complete list and every thinking man will want to make changes in it, it does seem to hit the high places, or the peaks that stand out on our cultural plain. We may even condense it to these concepts, *mechanical invention, mass education,* and *universal suffrage.*

As to the first of these, it is hard to realize the depth to which mechanical things have wormed their way into our activities. Your house, from electric doorbell to the ventilators in the roof, is one maze of mechanical devices by means of which the most diverse purposes are consummated. The fountain pen with which you write is no less a mechanical affair than your automobile. When you step out-of-doors you encounter new and ever evolving appliances in the same grand complex. We can say, therefore, that so far as our culture is concerned, it is in part, at least, characterized by great emphasis upon mechanical devices. But there is far more in this concept than the mere recognition of machines and tools, for so closely associated with these that it is difficult to see how one could exist without the other, are ideals of production and organization. The factory system which produces and, to a large extent, operates these machines is in some

respects the most distinctive element in this complex. Here also are our industrial institutions, those peculiar loose and semi-independent social units floating in the swirl of American life, originating spontaneously from individual initiative, but which constitute the forces that supply our national needs. Underlying these, and in reality the cause of their independent appearance, are ideals of invention and discovery. There have been cultures in the world, and for that matter are now, in which the great ideals held up before the young are achievements in war, but that is certainly not the case in America. With us, the continual cry is, "Invent! Produce!" The honors, the rewards, and the distinctions of life go to him who can devise something better than before. We are here using the term invention in a broad sense to mean any creation of a practical nature; hence from this point of view, the discovery of an antitoxin is just as much a great invention as the wireless telegraph. Thus the inventive ideal is broad and somewhat general, but yet so definite, that though it may be difficult to formulate it here properly, no reader will have the least doubt as to what ideal is meant. It has been dinned into his ears from the cradle up.

Hence, when we say that our culture is, for one thing, characterized by mechanical inventions, we have in mind that great complex based upon the inventive ideal, a complex embracing almost the entire gamut of our objective existence. So the inventive complex will serve not only as a convenient term, but as a legitimate interpretation of much that we see in our culture. Thus, most of the dissimilar and seemingly unrelated mechanics of life will, upon reflection, be seen to fall under this concept of the working out of inventive ideals.

We may for the moment turn to the next concept we have formulated as one of the few most distinctive characteristics in our culture. This we designate as mass

education, or simply, education. Like other things that are ever present, this escapes even us until our attention is called to it. The fact is that we seek to solve every difficulty by education, for if a community fails to accept modes of action that are logically the next best step in the forward movement, we say, "Wait until they get educated in this subject." No matter what it may be, the combating of disease, the inauguration of a new public service, the appreciation of art, dress reform, or anything of that kind, we look to education to make it universal and popular. The theory upon which we proceed is that the right thing will be recognized by the enlightened man or woman and carried out by his own volition. Like many other theories, this may be far short of the true state of affairs, but it may be a successful and workable one for all that. Anyway, it works so much to our satisfaction that we put our whole faith in it.

This idea that the individual is free to act so long as he acts right, or rather that he will make himself act right, is the ideal of our education. We want every boy and girl to have an equal chance in pursuit of the ideals just outlined. We do not expect them to run the race alike; in fact, we expect it to be a real race in which merit of all kinds will get its due and look to education to serve as the impetus. We have just noted how we leave the most important economic functions to free personal initiative, as, supplying milk to a city, clothing to a community, etc.; but now it is apparent that we look upon this as the field in which the individual is to have his chance and that education is to give him that chance. Yes, we expect even more, we expect education to see to it that the best of us strive to the utmost to render the highest kind of such service.

It may have struck the reader as strange that religion was not given a place in these outstanding characteristics of our culture. Unfortunately, that term is so closely

associated with the church, or specific cults, that its use might be confusing, and if there is any time when we should avoid chances for confusion it is now, for the pursuit of the light through this maze of culture will require the clearest thinking. Moreover, religion is the fundamental belief of a people, it is not merely their attitude toward a future life and a personal god, but their belief as to the real mover and shaper of human destinies. Now we believe that whatever accomplishes these ends works through education, which is in truth our religion.

This is not a new idea. It has been remarked before and characterized as our distinctive national religion. The bulwarks of this belief are our universities and research institutions, but underneath them, like a foundation of infinite breadth and depth, lie the numerous and varied educational mechanisms of which schools are but one class.

In other words, our culture is characterized by an over-ruling belief in something we call education—a kind of mechanism to propitiate the intent of nature in the manifestation of culture. Our implicit faith that this formula, or method, will cause this purpose to be more happily fulfilled, is our real religion. The reader may choose to define religion differently, but we are here concerned with the substance and not the symbol. We are setting out to see what culture is like and turning to the very hardest of all tasks, "To see ourselves as others would see us."

For example, we often find among peoples we choose to call less civilized, a class of men whom we designate as shamans, medicinemen, conjurors, etc. We usually speak of them with contempt, but we are not now dealing with questions of value. Where such men flourish they are called upon whenever the course of events goes wrong, sickness, famine, love, war, no matter what the

nature of the trouble may be, and they always proceed in one way: i.e., recite or demonstrate a formula of some kind. They may sing it, they may dance it, or they may merely act it out—no matter, the idea is that if you go through with the correct formula the forces of nature will right the wrong. When a boy the author saw an aged relative treat a woman for a swollen face: he took up a coal of fire between two chips, passing it around the patient's face while he recited a kind of ritual. On the way home, I asked him how he knew what to say and he replied that he had it written down in a notebook, just as he learned it long ago from an old man. Further, in response to my childish skepticism, he assured me that anyone could do it who committed the formula and followed the rules.

No doubt, many of my older readers can recall similar experiences. Was not this worthy man a true shaman? Would he not have given the hand of fellowship to an Indian medicineman or a Siberian shaman, if they had met on common ground? My old friend certainly believed that if the right words were said and the right motions made, the disease would be overcome. Of course, we call this gross superstition, but after all, it is the same type of action we still follow and, for all we can see, must always follow. All we can do is to improve our methods of selecting the right formulæ. When the electrician produces a current from a dynamo, he is following the right formula, so the physician when he gives antitoxin; but there are other times when both these men use formulæ that the next generation will denounce as gross superstitions.

The point is then, that in every culture, formulæ are used to propitiate nature in whatever form of gods or powers she is conceived, and that cultures differ not in this, for so far they are all alike, but as to the kinds of

formulæ into which they put their faith.[2] Our great formula for bringing about the realization of our leading ideals is education, as we have defined that term. It is a kind of grand over-formula by which we hope to perpetuate and perfect our culture, in so far as it can be done by the discovery and use of the right formulæ for the manifold specific exigencies of life.

We come then to the last of our main super-characteristics, universal suffrage. Again, we may be reminded that the question before us is not whether the vote *is* the right way to reach the ends we seek, whether universal suffrage is wise or foolish, whether women should vote or not, in short, whether our system of government fails or succeeds. What we seek is, to see clearly as one looking on from the outside, and to formulate a description of the phenomenon. What we see is a belief that the right way to solve social problems is by the ballot. We go even farther, for we assert that to cast a vote is one of the inalienable and sacred rights of man. Should a stranger come hither to study our culture, he would undoubtedly seize upon this expression as evidence of a religious sanction for the ballot, else how could a thing be regarded as sacred and inalienable. If we are honest with ourselves, we must admit that such a belief must arise from the assumption of a super-cultural presence that so conditioned us that the purpose of culture will be realized by each individual exercising his rational powers by casting a ballot. According to our creed or our faith we will substitute different words in the above formulation, but the essential pattern will be the same, for we believe that some extra-personal condition gives each individual this right no matter how we define it.

The idea is that what most of the people in the group

[2] For a more detailed insight into the working of superstition see the literature on magic, animism, and religion, especially, Tylor's *Primitive Culture;* Marett's *Threshold of Religion;* and Frazer's *The Golden Bough.*

approve will be as near the correct solution as can be achieved for the time being. Questions which in some of the world's cultures are decided by fighting are here settled by a vote. Those of us who can stand a political campaign with some indifference so as to see it from the outside, realize that no affair of life can so move or excite the individual American as the discussions preliminary to a vote. To a stranger all this must look a little queer, to a Turk or a Tibetan it might even appear laughably absurd, but all of them would without hesitation regard it as one of our most striking culture traits.

Though we began this consideration of our culture characteristics under the assumption that the three concepts we formulated would define the whole, like a few well-placed peaks in a mountain range, we now suspect that there is still something more rising above the line of vision. These same Oriental observers would note with some surprise, perhaps, that even a small community would at times disregard its own immediate interests to further what it chose to regard as the good of the whole country. In other words, there is something we sometimes call nationalism that also stands out as a trait of culture. One gets very near to this trait when he attends some Fourth of July orations or hears many of the stump speeches in a presidential campaign. So nationalism is another concept expressing itself in culture. It comes very near being a state of social self-consciousness, because of which a whole people will think, act, and move as one, individuals and classes voluntarily making great sacrifices to the national end in view. Like all cultural concepts, this one is a complex of many associated ideas. Prominent among these is the belief in a national destiny, or mission. To see that such a belief is deep and firm in our people needs no prophetic eye, it is heralded from every village pulpit and lecture platform in the country. It is a faith and a zeal to spread our culture by fair

means or foul to every corner of the earth. For instance, we so believe in the virtues of our mechanical appliances that we have no patience with the Oriental or the savage who looks upon them merely as the idiosyncrasies of a foreign culture, which they really are. We feel it to be our mission to make these doubters and halters see that what we have is really the very best. We want them to come into the game and take a hand in the invention of mechanical appliances and the discovery of new principles for still further application; to come willingly, but if they won't—well, more of that later. Pride in their culture, belief in their mission, zeal to "convert the heathen," all people may have in some fashion, but it is clearly one of our cultural concepts that we have a national life and that to its destiny and mission all must be subordinated.

We have now arrived at a satisfactory answer to the question, Have we also a culture? We see that we at least have what passes under this name and that it becomes a definite describable phenomenon as soon as we look at cultures in general to get a point of regard. It has unique and striking characters or individualities which we found expressible by such concepts as invention, education, suffrage, and nationalism. These concepts stand as the central ideas in vast socio-economic complexes which in their totality make up our culture. Having realized this insight into our subject, we may proceed with greater confidence.

POLITICAL BOUNDARIES AND CULTURE

One can best realize that he lives and moves in a culture when he takes the comparative point of view, or when he measures one culture off against another. The same is true of individuals we meet; by comparing one with the other, noting wherein they are alike and wherein different, we arrive at a knowledge of individuality and the true significance of individual differences. Possibly,

the same conditions that make this true of personalities make it likewise true of cultures; but, in any event, the man who knows more than one culture is truly worldly, or culturally wise. The writer once met an aged United States Indian who had these attributes. He said that it was plain that the white people had one way, his tribe another; that in his youth he lived as an Indian, but now he lived and thought as a white man. In a most disinterested and calm fashion he proceeded to speak of the weakness of each, their strong points, and their relative ethical values. True, he did not use these terms, for he spoke rather concretely; yet it was plain that he had come into a full realization of how extra-personal a culture is and how it might be possible for an individual to pass from one type of culture into another, without changing his fundamental human traits or losing any of his sense of personality. No one can help being struck by the uniqueness of a life that began in one culture and ended in an entirely different one, and certainly no extended argument would be needed to convince such a man of how conventional and formal a thing culture is. We do not mean that culture can be changed like changing coats at a tailor shop, yet it is conceivable, that in the days of old when the frontier of our country was along the Alleghanies, a man could have lived a part of the year as an Indian and part as a colonist. This is not only conceivable, but so far as we can judge, did sometimes happen. However, such experiences are denied the most of mankind; the best we can do is to compare what we see of other cultures as well as of our own. And it is by this method that we approach the significance of political boundaries.

We usually think of peoples according to their nationalities. Thus, we conceive of the world's populations as constituent parts of a number of independent political states, the boundaries to which are now defined with

geographical exactness. When our forefathers settled on the Atlantic Coast, they found the inland occupied by groups of Indians and being accustomed to comprehend a new people by defining their political affiliations, they naturally sought for the limits to tribal governments. They soon found that there were no true states under which the Indian population could be grouped, but that almost every village had its own independent government. There were a few exceptions like the "Six Nations" of New York, or the Iroquois, which embraced a number of village groups more or less closely federated, but the rule was for each local group to be independent. Consequently, the colonists fell into the habit of recognizing the chief of each little tribe as the king of a state. With him, or through him, for he rarely had much in the way of kingly power, they made treaties and alliances, or waged war, as the occasion demanded. The United States Government accepted this same view and placed all agreements with these little clusters of humanity on the plane of treaties with foreign powers, treating the chief as an equal of the President. It was not until 1871 that Congress by solemn legislative enactment declared that these Indian groups were not nations, but merely groups of subject peoples. Yet, our forefathers were correct in their procedure, for each of these small groups of a hundred to a thousand persons was in truth an independent sovereign political body. As to just how many of these Indian states there were, we have no exact knowledge, but according to the most careful estimates there were more than two thousand for the whole of North America, of which about one-third fell within the bounds of what is now the United States. Confining ourselves, then, to the United States, since we know its geography best, were there six hundred or more different cultures in this country when the *Mayflower* first sighted Plymouth?

Fortunately, our anthropologists have made such progress with the study of the surviving Indian tribes, that a concise statement of the case can be made. We can say, at once, that though six hundred separate cultures there were, one for each tribe, there were not so many equally different cultures, for, if we characterize these cultures by the method of the preceding section, they will fall into seven types, or seven large culture provinces. These are usually designated as the Northeastern Woodlands, the Southeastern Woodlands, the Great Plains, the Southwest, California or the South Pacific Coast, North Pacific Coast, and the Columbian Plateau. The first of these comprises the New England States, New York, New Jersey, Delaware, Pennsylvania, Maryland, West Virginia, Ohio, Michigan, Wisconsin, Illinois, with parts of adjoining States and Canada. The Southeastern Woodlands takes in all the typical Southern States, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, and Texas. The Great Plains culture province embraced what are now Montana, North and South Dakota, Wyoming, Nebraska, Colorado, Kansas, Missouri, Oklahoma, with parts of Texas, Iowa, Minnesota, Utah, Idaho, and Canada; the Southwestern, Arizona, New Mexico and part of old Mexico; the South Pacific, California, Nevada and part of Oregon; the North Pacific, the western half of Oregon and Washington, extending far up into Canada; and finally, the Columbian Plateau, the eastern parts of Oregon and Washington, the greater part of Idaho, western Montana, and a large part of British Columbia.[3]

For one thing, we see that these cultural boundaries do not quite correspond either with the present state or national boundaries. We could have sketched them out on a map, as anthropologists sometimes do, but we have

[3] For maps and details, see the author's, *The American Indian.*

not done so here because culture boundaries are not of the same quality as those used in defining political groups. Political powers draw arbitrary lines on the surface of the earth and say, "Thus far, and no farther." But culture, as we shall see, frequently laughs at such barriers, at least it did in aboriginal America.

But we have not reached the heart of our subject, for we must wonder how it would have looked if in 1620, or thereabouts, we could have traveled through one of these culture provinces, going along from tribe to tribe. Would they all seem to live and act just alike?

This can be best answered by a close view of one of these culture provinces. Most people are so familiar with the Indians of the Great Plains that they forget there ever was another type of Indian culture. Even our best artists and story writers will draw and depict Plains Indians welcoming Hudson on Manhattan or fighting with the French in the colonial wars. It will, therefore, best serve our purpose to take this most familiar type of Indian culture for analysis. Plains Indian culture is most strikingly associated with the buffalo, or bison, which not so very long ago roamed over the entire Great Plains Area. The publications on the subject show that the distribution of the buffalo and the Plains Indian culture closely agree. This animal supplied these Indians with one of their chief foods in accessible and almost never-failing abundance. For a part of the year, at least, all Plains tribes used the conical skin tent, or tipi. In early times the dog was used to transport baggage and supplies, but later, horses became very abundant and it is not far wrong to speak of all Plains tribes as horsemen. When on the hunt or moving in a large body most of these tribes were controlled by a band of "soldiers," or police, who drove in stragglers and repressed those too eager to advance and who also policed the camp and maintained order and system in the tribal hunt. All

Indians are quite religious. So most of the Plains tribes had a grand annual gathering known in literature as the sun dance. In general, these few main cultural characteristics may be taken to designate the type—the use of the buffalo, the tipi, the horse, the soldier-band, and the sun dance.[4]

If now we had made an excursion into the Great Plains while these traits of culture were in full function, we should have found a large number of independent tribal groups, the best known of which are the Arapaho, Arikara, Assiniboin, Bannock, Blackfoot, Cheyenne, Comanche, Crow, Gros Ventre, Hidatsa, Iowa, Kansas, Kiowa, Kiowa-Apache, Mandan, Missouri, Nez Percé, Northern Shoshoni, Omaha, Osage, Oto, Pawnee, Plains-Cree, Plains-Ojibway, Ponca, Santee-Dakota, Teton-Dakota (Sioux), Ute, Wichita and Wind River Shoshoni. As we went from one to the other, slight differences would appear now in dress, now in beliefs, now in this, and now in that; but in most cases, we should not hesitate to say this tribe belongs to the Plains type of culture. For example, some of the tribes, as the Pawnee, Omaha, Osage, etc., who lived on the eastern edge of the Plains, raised a little corn and a few vegetables, like the Eastern Indians, while if we went to the far western border of the Plains we would have met tribes like the Ute and Shoshoni who made baskets like the Indians of California. However, neither basket-making nor gardening are characteristic of the Plains type of culture, but the former is a distinguishing trait in the South Pacific culture type and so is gardening in the Southeastern Woodland type of eastern United States. Again, if we had traveled up and down the very heart of the Great Plains Area among the Blackfoot, Cheyenne, Crow, Dakota, Kiowa, etc., we would have met with neither of these variants; in other words, we would have found approximately the pure type

[4] See the author's *North American Indians of the Plains.*

of Plains culture. Let us not forget then that the cultures of these many little independent Indian governments have some differences, because a study of these differences will in the end bring us nearer to a full realization of what culture is. But to return to our question as to the identity of culture and political boundaries—we should have considerable difficulty in noting any important differences between the cultures of say, the Crow, the Dakota, the Kiowa, and Cheyenne Indians. Disregarding language, they would appear as much alike as do the present modes of American life in Massachusetts, Georgia, and Colorado. So we may be sure that whatever the causes that operated to bring into existence these many Indian governments, they were not the same causes that produced the Plains type of culture, for these culture-forming causes seem to have paid not the slightest heed to political barriers.

Nor is this a condition in any way peculiar to the Great Plains, for the special students of American anthropology have demonstrated it in each of the aboriginal culture provinces. Nor again is it peculiar to the American Indian, for our present knowledge indicates, that if we had gone to Africa, Australia, or Northern Asia, three hundred or more years ago, the same disparities between culture and political unity would have been observed. We can, therefore, make a most positive statement that there is not only no necessity for cultural unity to go hand in hand with political unity, but that among primitive peoples, at least, the cultural unit is by far the larger. In other words, many independent and often hostile states lived under the sway of the same culture.

LANGUAGE AND CULTURE

At this point we may digress for a moment to consider the question of language. It is true that even in such small primitive tribal states as we have been considering

there is unity of speech; for in a given tribal state, or group, all speak a mutually comprehensible tongue. This is practically universal among the primitive peoples of the earth. On the other hand, we find that the type of culture shows the same disregard for linguistic differences as for political boundaries. This would, of course, follow, since the boundaries of language and states tend to coincide, and if culture ignores one, it must also ignore the other.

In the Great Plains culture type which we have used as an example of the disparity of bounds to culture and political unity, we find not only twenty or more languages spoken, but these represent at least six different families of languages. Even the four most typical tribes as to culture, represent three linguistic families. But we are not now concerned with the families, or stocks, of languages, but with language. English and French are of one family, but he who knows one cannot thereby comprehend the other. As to the relations between linguistic families and culture, we need not bother now, for the point is that among primitive peoples, at least, the rule is for identity of speech to cease when we reach the political or tribal boundary. Yet it sometimes happens that two tribes will be able to understand each other in ordinary conversation, but in such cases the speech of one will be considered a dialect of the other. In short, there is every reason to believe that when tribal connections are broken, they are not long so maintained without some change in speech. Naturally, all of these primitive languages are unwritten and so far more plastic than the languages we know, with their written and objective standards. Without such objective standards uniformity can be maintained only by continuous social contact such as is possible in a single tribal group. In view of all this, we are justified in entertaining a suspicion that there is a definite reciprocal relation between unity of speech and

unity of government. Anyway, we can dispose of this case at present, since language falls in with political organization in contrast to culture, by stating once for all that differences in language have no certain significance in the distribution of culture.[5]

BIBLIOGRAPHY

Boas, Franz. *The Mind of Primitive Man.* New York, 1911.

Frazer, J. G. *The Golden Bough.* A Study in Magic and Religion. Third edition. Parts 1–12. London, 1911–14.

Goldenweiser, Alexander A. *Early Civilization.* An Introduction to Anthropology. New York, 1922.

Marett, R. R. *Anthropology.* New York, no date.

The Threshold of Religion. London, no date.

Parsons, Elsie Clews (Editor). *American Indian Life.* New York, 1922.

Steffansson, Vilhjalmur. *My Life with the Eskimo.* New York, 1919.

Tylor, Edward B. *Primitive Culture.* Researches into the Development of Mythology, Philosophy, Religion, Languages, Art and Customs. 2 vols. New York, 1889.

Wissler, Clark. *North American Indians of the Plains* (Handbook Series, American Museum of Natural History, No. 1, Second edition, New York, 1920).

The American Indian. An introduction to the Anthropology of the New World. Second Edition, New York, 1922.

[5] See Boas, *The Mind of Primitive Man;* Marett, *Anthropology.*

CHAPTER II

THE EURO-AMERICAN TYPE OF CULTURE

The little comparative excursion we have just made gives us a kind of perspective, since from the standpoint of primitive cultures and tribal groups, we can see how the case stands with us today. One of the questions in which we are most interested is, What are the bounds to our own culture?

In the first place, we find that our language is essentially the same as that of Canada and of England. How this came about we all know. Canada, Australia, New Zealand, South Africa, are in the main component parts of the British Empire, to which we once belonged. It is in fact a mere political accident that we are not still a member of that remarkable political organization. Thus, after all, the facts respecting our language are not strikingly exceptional, for our separation was recent, and we have voluntarily joined the others in making one speech standard.

Turning now to our culture as we characterized it in the former chapter, how is it with these United States? At once, there comes into our mind differences, thus Boston is not Philadelphia nor Chicago, nor yet San Francisco. We are fond of saying that they are very different, but, if we are pinned down to it, we find it very hard indeed to say just where these assumed differences lie. So far as the culture characteristics we have defined go, they are certainly alike. Their beliefs in invention, education, suffrage, and nationalism, coincide in all essential points, so do their dress, manner, methods

of trade, etc. The fact is that as we travel about we take note of the minute differences, rather than the overwhelming similarities, thus greatly magnifying the former. These differences are truly mere variations from the culture norm, or type, we live under. They are quite like individual differences; for when we say that "All Chinamen look alike," we mean that they are so different from us that we sense only this one aspect of the phenomenon. They are in so far alike that they constitute another type of man, but when we take note of individual Chinamen with respect to this type, we have no difficulty in discerning differences in stature, shade, age, expression, health, mentality, etc.; in short, the whole complex that enables us to distinguish one person from another. In these cases of personal identification we do not permit consciousness of individuality to obscure the type, because the type is objective, or out of our own sphere. It is a little more difficult to decide upon the type of our own people, for example, since here the individual differences are about all that we have allowed our attention to fix upon. In just the same way it is hard for us to see that the different parts of our great country have cultures of one type to which they conform with relatively slight variations. Anyway, there is very great culture unity throughout these United States, but the real question is, Does this culture stop there?

If we cross the line into Canada, the differences are scarcely greater than between Boston and Seattle. In fact, western Canada seems more like Seattle than Seattle is like Boston. Nevertheless, the means of transportation are the same, etc., etc. In fact, so far as we can see, the culture is the same; it is even much more nearly the same than were the cultures of the Crow and Cheyenne Indians of the Plains Indian type.

If we turn to Mexico, the differences begin to be obvious. Mexican culture is like our own and again it

is not. After looking into the case, one gets the impression that there is a real effort on the part of the Mexicans to practice the fundamental traits of our culture, but that it still remains an effort. Nevertheless, if we look back at the native culture of the Aztec which the Spaniards found so hard to destroy, in fact, never did entirely eradicate, and then look at our own, there can be no question but that the Mexico of today has as much right to be classed with our type of culture as had the basket-making Ute with the Plains Indians. It is a variant, a mixture with something else, but here is where it belongs. It is not typical in the sense that we now use that term, in fact rather divergent. The remainder of Middle America and all of South America is in the main more or less divergent but, nevertheless, shows affiliations with this same type.

It may be rather tedious to follow up this survey into the Old World, but it is essential to our understanding of the subject. Outside of Canada, our nearest culture parallels are found in New Zealand, Australia, and British Africa. All seem nearer to us than Great Britain but none quite so identical as Canada. Turning to Europe, the whole may be said to gravitate towards this same type. Most like our own is the culture of England, France, and Germany and a few of the smaller states. Least like us are Russia, the Balkans, and some of the Mediterranean States. In fact, it is an open question if some of these are more like our type than they are like something else.

It appears then that we are part of an extensive culture province, or area, and that we have brought into view a very widely distributed type of culture. To facilitate further discussion, we must give this culture type a name, and since it seems to be strongly in evidence in Europe and also in America, we shall speak of it in this book as the Euro-American type.

If we now turn to Asia, we find cultures still more divergent. Beginning with eastern Europe and proceeding toward the heart of the Asiatic continent, we shall soon meet with so many differences as to suggest a new type. To this type the name Oriental is frequently given, though Asiatic culture would serve equally well. Moreover, that this is a culture different from our own, we have been taught from infancy. We can also see without difficulty that all the different states of Asia have overwhelming universal characteristics because these stand out in contrast to our own. It is this far-away objective condition that enters into our comprehension of Asiatic culture and that enables us to see it so readily. So we have no difficulty in noting that the culture in Japan, China, Tibet, Persia, and even in India, is of one general type, but what is really hard for us is to see that the same is true of our culture when grouped with that of Germany, France, England, Canada, etc.

But our concern here is with the bounds to our own type of culture. As the world stands today we do find some Asiatic traits in Euro-American culture and some Euro-American traits in Asia. Of the former, we need but mention tea-drinking and its social complex; the reader can supply others for himself. Of the latter, we are more fully informed. In Japan, one finds railways, steam engines, ships, factories, etc., all of Euro-American origin. To a lesser degree, this is true of other Asiatic countries, but all, without exception, show some traces of this non-Asiatic culture. Thus, the mechanical traits of Euro-American culture are making their way into Asia; but these intrusions are about the only traits in common with the Western World and are so in the minority, that we can all agree that the boundaries to our type of culture fall outside of Asia. The one important difference we assume is that Asiatic culture is of a hoary age in contrast to our own. On the other hand,

Euro-American culture is relatively new, and so spoken of as modern.

We have now reached the objective of this part of our investigation and find that the culture we manifest and which we are fond of calling our own is not strictly a separate type, but merely an individual member of a vast culture province represented in every part of the world except Asia and that even there it has secured a strong footing. Regarding then the bounds of this type of culture as compared with those of other types, we note its wide distribution without regard to distance or land connections. Further, it is the most distinctly modern culture we know, which, with the means of ready communication that make its unity possible, are among the most characteristic of its traits. It rises here like a new order of culture, for though the old primitive order of culture mocked at political boundaries, it was easily balked by water and other geographical barriers, but this modern order of culture makes light of even these. Yes, not even the whole circumference of the earth is beyond its leap.

We may now formulate the view of culture and ourselves that we get when the whole sweep of the phenomenon is so regarded. Cultures fall into types and the number of these types is not very great. Of the so-called higher cultures of the last five hundred years there are but two existent types; the remainder comprises something less than fifty primitive types. All show the same tendency to overstep the bounds of states and language, as if culture and political unity were two unrelated phenomena.

AMERICA'S PLACE IN CULTURE

We have now developed our problem to the point where we see that there are not only culture types in the world, but that our own culture is also merely a member

of a type we choose to call the Euro-American. It also appears that political organizations are not the determining factors in culture, which at once raises the question as to where these determining causes lie. One may suspect either the geographical environment, blood or race, or both, as being important factors. All suggest interesting lines of inquiry to which we must give more than passing regard, yet the most enticing question now before us is the precise place we hold in this assumed Euro-American culture. First, let us treat the case precisely as we did the Indian culture of the Great Plains, and formulate the type characteristics. This will not delay us long, for we have already reduced our own traits to a few convenient concepts, as invention, education, suffrage, and nationalism. In this case, however, we used these terms in a certain specific sense, since we did not mean any kind of invention, education, etc., but the particular form these took in our own culture. As mere words, invention and education may stand for many different culture elements. So we must be specific in our characterization of this Euro-American culture.

In geographical extent it comprises the greater part of Europe, North America, a part of South America, and the colonies of European nations in Africa and the islands of the Pacific. The traits that are found throughout this extent are not difficult to enumerate. For instance, the use of steam power, particularly for navigation and railway transportation, is found here. The telegraph in its various forms is equally diffused. In the same association may be mentioned the electric light and gasoline power. The newspaper is another manifestation of the inventive mechanical phase of this culture. Someone may object that railways and telegraph lines are found in cultures of the Asiatic type. It is true that they are found there, but only in rare instances have they acquired a footing of their own, for it is the proselyting efforts of

certain units in the Euro-American culture that put and even maintain these things in the out-of-the-way places of Asia and North Africa. In most cases, their first appearance is within the recollection of the reader. That they came from Euro-American sources is not open to doubt, as they belong to the Occident in contrast to the Orient.[1]

If we shift our attention from these mechanical features, one of the first striking uniformities is belief in the Bible and the support of an institution known as the church. We are ourselves too deep in the cross currents of our culture to realize how small are the differences between Catholics and Episcopalians, Methodists and Baptists, and even believers and unbelievers. The bald fact is that scarcely a village exists, throughout the vast area covered by this Euro-American culture, in which there is not at least one building for church purposes, and in which there are prayers and discourses all based upon and directly derived from the same Bible. All observe the same sacred seventh day, not to mention other special days in the sacred calendar. Indeed, what greater evidence of unity in culture for the Euro-American province can we expect than the observance of Sunday? The moment we arrive at a place where it does not hold, we may expect to see on every hand the signs of another culture, for the observance of this sacred day is merely an index to an ethical complex that spreads like a nervous system into every nook and corner of the social organism. Enthusiastic followers of the church often proclaim that there is nothing else to our culture, that to speak of it as Christian is to name all that is worthy, good and individual. While this may be an overstatement of the case, it is nevertheless true that when we speak of the Christian

[1] For other points of contrast in modern cultures, see Kidd, *Principles of Western Civilization;* Dewey, J. and H. A., *Letters from China and Japan;* Ross, *The Old World in the New;* Smith, *Village Life in China;* and Smith, *Chinese Characteristics.*

nations, we do designate just those enumerated in the preceding pages as belonging to the Euro-American culture type, and no others. It is, therefore, just as distinctive as the mere materialistic characteristics just noted, in fact a little more so, since the separation of the Christian nations from the non-Christian is rather abrupt. There is very little chance for an intermediate position.

When we look farther afield for other distinctions, the student of cultures is sure to be impressed with the Euro-American codification of law and the extra-individual position and power possessed by the law. It is true that other cultures had legal forms and methods of judicial procedure; we are not speaking of these terms in the abstract but in the concrete. The codified law of the Christian nations is essentially the same in form and to a large extent in substance. Those versed in the history of the law know that in the main it is a heritage from Rome. Had our history been different it is conceivable that the form of the law we now possess would also have been different. Our point of view here is merely that we happen to have a form of law codification that is quite unique among the other cultures of the world as they stand today. This law is a vast complex as permeating as the Biblical complex and, if anything, more deeply rooted in our culture.[2]

Again, if we look abroad over the range of Euro-American culture, we find something which we call the army and the navy, both parts of a system to which the term, militarism, is often applied. That this is a prominent feature in Euro-American culture no one will dispute, but it may be said that it is not found in America, nor the English-speaking colonies, and therefore, not typical. We are now getting into the very heart of the question before us. In the preceding chapter we saw how

[2] See, under appropriate headings, Kocourek and Wigmore, *Evolution of Law,* Part I and II.

among the aboriginal American Indian culture provinces the several nations constituting it did not have equal cultural variation. There were some that were true to the type, but others that varied somewhat, even to the extent of admitting traits of foreign cultures. We are also now clear that the same is true of the nations forming the Euro-American culture, some appear typical, others have marked leanings toward other types, while still others seem to have unique features. Our problem is then to discover the most typical of these nations. Since all these countries have a history there should be no difficulty in tracing the new traits to their approximate sources.

Thus, the steam engine was first put into real use in England where Watts made it truly practical by devising the double-acting engine in 1782.[3] Then followed the first commercially successful steamboat on the Hudson River in 1807 and in 1819 the first steam vessel crossed the Atlantic. She was American built, but England had reached a point where she was equally ready for steam navigation. But those familiar with the history of inventions know how difficult it is to attribute any one of them to a single person, for little by little, the fundamental ideas were brought together into proper association to achieve the result. In the case of steam navigation, we know that several successful boats were made in England, but their inventors did not solve the problem of making them practical, as we say, or of socializing them, which from our point of view, means making them a trait of culture. It is this last achievement that concerns us in this discussion. Thus, it may readily be granted that attempts at the use of steam power were made in France, Italy, and perhaps elsewhere in Europe, but it was in England and the United States where it was first made a feature of culture. Between these two countries there is very little

[3] Thurston, *Manual of the Steam Engine*; Thompson, *Outline of Science;* and Yerkes, *The New World of Science.*

distinction, except that priority in navigation certainly rests with the United States. On the other hand, the steam locomotive was developed in England though railway systems were built up in the United States with greater rapidity. The later history of the railway indicates that the United States, with its heavy trains and huge locomotives, with thousands of miles of trackage, in fact about as much as the remainder of the world combined, must be recognized as the center of railway culture. Since Canada has shared in this development and her railways are of the same pattern she may be included. Hence, we can say that English-speaking North America is the place where this trait of Euro-American culture is most typical. Next comes England, which appears very closely parallel, and then Germany and France. When we turn to other inventions, the place of their culturization is even more definite. For North America, we have the telegraph, telephone, cotton gin, sewing machine, typewriter, steam shovel, iron-clad, revolver, phonograph, incandescent electric light, submarine, aeroplane, fountain pen, etc. To this list of truly epoch-making inventions could be added a long list of ingenious automatic machines for the most complicated kinds of work. These again seem to center in America, though frequently originated in England or Germany; yet, in by far the majority of cases the original, or parent, type of automatic machine was first put to use in America.

When, however, we turn to trade, or commercialism, the center seems to shift to England, with America and Germany as close seconds. England, however, has been in the game far longer than either, and with her rests the credit for the initiation of many important phases of commercialism as we know it today. But trade as a whole has a long and hoary history. Among the first maritime traders in the Western World were the Phœni-

cians. They were succeeded by the traders of Carthage, one of their western colonies, and Carthage was eventually destroyed by Rome; but Rome seems not to have become very strong in ocean trade. After Rome disintegrated, Venice became for a time the great trade center, but this eventually shifted to Antwerp, to Lisbon, to Amsterdam, and finally to London, which still leads.[4]

We could pursue this history of our culture traits to the limits of a volume, with profit and great gain of insight into the nature of culture, but this would ultimately lead us into the history of culture, whereas the point we are now after is to find the modern center of the Euro-American type of culture. A few more examples may, therefore, not come amiss. If we turn to costumes, or fashions, the center seems to be in France, or more specifically, Paris. When it comes to cotton and wool weaving, the center seems to shift to England. In the chemical industries, the center falls in Germany. And so we might go on to more immaterial traits, such as music, painting, suffrage, etc. The result would be always the same, now a center here, now there, but still going about in the same beaten track, as now to England, then to France, again to Germany, and back to America.

However, we have now carried this discussion far enough to see that the culture of the type to which we belong certainly centers somewhere among North Americans, British, French, and Germans. That one of these is more typical than the others and so is the most typical, follows as a natural corollary of our observations. On the other hand, to determine the identity of this most typical one people is difficult, because we have just seen that many important culture traits are unevenly distributed. Thus railway culture seems to center in one place, textile culture in another, the costuming art in

[4] Gibbins, *History of Commerce in Europe.*

another, universal suffrage centers in one as against militarism in another. Hence, to decide upon the people having the most typical Euro-American culture would require a series of valuations, or gradations of many concrete traits of this culture. So, in last analysis, our conclusion on this point would be warped by our particular social and national biases. For one thing, a Frenchman tends to feel that his people are the most typical, or rather represent what should be the most typical, because their cultural activities are of the greatest value to himself. In like manner, the Americans (Canadians and U. S. Citizens) will put the highest value upon their cultural achievements, and so on. But in this discussion we must keep as free as possible from the question of culture values, for we are seeking an understanding of what culture is and how it works.

The chief point we have now attained is that the somewhat naïve distinction that is usually drawn between primitive cultures and those of the historical nations is an arbitrary one, so far as the real characteristics of the phenomena are concerned. We saw that the so-called primitive cultures were segregated in geographical areas quite irrespective of national lines and that the several tribal or national groups constituting a culture province took varying positions as to the purity of their traits. In other words, they varied around a type in just the same way as do stature, weight, mental quickness, or other variable phenomena of life. Then when we turned to the so-called civilized nations, we found again these same cultural provinces, embracing many political groups that also vary in culture, but still correspond to one type. The tracing out of these variants, now in civilized cultures and now in primitive cultures, shows beyond doubt that we are dealing with the same phenomena in both. The difference we make between the two is largly based upon historical knowledge that Euro-American culture

and Asiatic culture are related and have a remote common origin.

But the task we set ourselves at the beginning of this chapter was to discover the place of our people in the Euro-American type, and this can be answered, in the manner indicated, by the statement that, if we do not manifest the most typical culture, we are among the three or four groups of people who do best represent the type.

BIBLIOGRAPHY

Dewey, John and Hattie Alice. *Letters from China and Japan.* Edited by Evelyn Dewey. New York, 1920.

Gibbins, H. de B. *History of Commerce in Europe.* London, 1891.

Kidd, B. *Principles of Western Civilization.* New York, 1902.

Kocourek, Albert and Wigmore, John H. *Evolution of Law*: Select Readings on the Origin and Development of Legal Institutions. Part I, Sources of Ancient and Primitive Laws; Part II. Primitive and Ancient Legal Institutions. (Boston, 1915.)

Ross, Edward Alsworth. *The Old World in the New.* The Significance of Past and Present Immigration to the American People. New York, 1914.

Smith, Arthur H. *Village Life in China.* A Study in Sociology. New York, 1899.

Chinese Characteristics. Fifth Edition. Boston, no date.

Thompson, J. Arthur (Editor). *The Outline of Science.* A Plain Story Simply Told. Vols. 1–4. London, 1922.

Thurston, R. H. *Manual of the Steam Engine.* Fifth Revised Edition. 2 vols. New York, 1900–1902.

Wigmore, John H. See Kocourek, Albert and Wigmore, John H.

Yerkes, Robert M. (Editor). *The New World of Science.* Its Development During the War. New York, 1920.

CHAPTER III

THE CONTINUITY OF CULTURE

THAT culture is a worldwide phenomenon is now apparent and the previous discussion suggests that it is also accumulative, or handed on from one age to another. We assume no one doubts the truth of this assertion, but call attention to it here because of the light its realization will throw upon our inquiry. History is usually thought of as a recital of the political fortunes of mankind and in fact this has been its chief interest; but when it really grapples with its subject, it begins to deal with the history of culture, or at least with the career of certain types of culture. If, for example, we revert once more to our discussions of the chief culture traits of America and seek their origin, history points the way. Thus, American culture in the main came from England and England's culture from the continent. Again, taking Europe as a whole, it is clear that its culture rests upon the ruins of the Roman Empire, and this in turn upon Greece, underlying which, is the remarkable culture found at its best buried deep in the Isle of Crete. But Crete had its roots elsewhere, apparently in Asia Minor and Egypt.[1] We sometimes read that Egypt grew up on the banks of the Nile from mere savagery, and no doubt the Egyptians did so, but the culture of Egypt shows that it drew strongly upon Asia. But here we begin to lose the trail, not because the traces are wanting by which this great trek of culture can be run down, but

[1] See *Annual of the British School at Athens,* vols. 6 and 7; also Breasted, *History of Egypt.*

because investigation has not yet been carried into the heart of Asia. True there have been glimpses here and there, but these only show that the origin of this Euro-American culture is bound to be the same as that of the Asiatic. Students of Chinese and Tibetan origins have gone just far enough to show that these cultures will link up with the old, old, Asiatic cultures that deeply underlie what we call civilization. We need, therefore, waste no more time on this point, for the Euro-American culture of today is the accumulated increments of people's strivings, inventions, and borrowings, the top of a series, the root of which seems to lie in the very heart of Old World antiquity.

If at any time we are disposed to over-emphasize the contributions any one group of people have made to this series and so doubt that its foundations lie in ancient Asia, we need but recall the histories of a few fundamental traits in our culture. The cultivation of wheat, the manufacture of flour and bread, were flourishing in Asia in Biblical times. The use of the plough and the ox yoke are not only very ancient, but their forms and uses have undergone little modification since the dawn of history.[2] Then again the horse appears to have been introduced into Mesopotamia by the neighboring Kassites some four thousand years ago, but its domestication was obviously little short of ancient history even then for the inhabitants of the great plains of the interior of Asia. From Mesopotamia the horse can be traced into Europe. Then again, in Euro-American culture almost everything is either on wheels or operated by wheels and the homely old cart can be traced back into the still unknown dawn of Asia. Iron and its predecessor, bronze, were not always members of this series of culture achieve-

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[2] Read Laufer's *Some Fundamental Ideas of Chinese Culture* in the *Journal of Race Development,* vol. 5, pp. 160–174. For a broader view of the historical setting see Myres, *The Dawn of History.*

ments, but struck into it somewhere along the line. Bronze may have come in on the Asiatic side and possibly iron also, though some students believe that the Negro peoples of Africa were the originators of iron culture, passing it on to Egypt. On the other hand, Asia makes strong claims for priority in the use of iron. However this may be, iron strikes into our series when eastern Asiatic nations were flourishing as the most typical of its members. Other examples will occur to the reader, particularly such as appear in historic times, as glass, gunpowder, printing, electricity, and aerial navigation. The character of the phenomenon is now clear. In our effort to come into a realization of just what our culture is, we are quite like a blind man, who, trying to arrive at the idea of a tree, comes up to a mass of branches lying upon the ground as they were left by the woodcutter; he is unable to sense the trunk for it has been moved from his reach, but the branches all suggest that they had such a central stem. We are in much the same predicament, for the branches of the culture tree are in evidence on every hand, all seemingly converging towards a main trunk in the Old World.

But what we have just discussed is after all a circumscribed part of the world's culture. Is this series in any way connected with the cultures we call primitive? Our tree may, after all, be but a branch, the main top possibly of the whole culture scheme. Dropping this analogy and returning to the conception of culture as a series, we may be reminded that in the earlier part of this discussion, we considered culture only as cross-sectioned by the present century. From this point of view we saw that culture covered the entire habitable earth, falling into a relatively small number of geographical types. We now see that this is but the horizontal plane of the latest phase of the series, for culture has a third dimension, a depth, a past, of no one knows how great an antiquity.

In western Europe our archaeologists have brought to light the remains of cultures associated with the mammoth, the cave bear, and many other animals long extinct. These earliest cultures are called the paleolithic, or old stone age, and they were followed by the neolithic, or the age of polished stone implements. After the neolithic comes the bronze age we have just noted, and then the use of iron. Our knowledge of all these different levels of culture in this grand series is far from large, but each year sees it advance. The time sequence is certain for western Europe, where the peculiar geographical conditions induced men to live at the entrance to caves. Here they left behind samples of their handiwork and occasionally their bones. These lie one upon the other so that there is not the least doubt as to which are the older. The details of this fascinating story of man's long upward struggle in Europe at a time when even glacial ice had to be contended with, are to be read in the books dealing with that subject,[3] but our present problem is the place of this in the world's entire culture series. There are those who doubt that there is a connection between these early cultures of the stone ages in Europe and the age of bronze, for the reason that the data we have do not show definite connective links; but these same data do not negate its possibility. We must not, therefore, try to prove too much. Each year sees some new connection established. Thus, it was once felt that the two stone ages must be distinct, or rather members of two unrelated series, because no intermediate cultures were found; yet such were at last discovered, so that there is now no troublesome hiatus. It is reasonable to expect, therefore, that since the initial end of the culture series is found to be a continuous accumulation of achievements and that the opposite or modern end of the series

[3] Osborn, *Men of the Old Stone Age*; Tyler, *The New Stone Age in Northern Europe;* Elliot, *Prehistoric Man and his Story.*

has the corresponding form, the two must be parts of one whole.

However, we are so ignorant of the early archaeology for most other parts of the world that we cannot strike off a cross-section for the whole world at, say, the time when bronze first made its appearance, or when polished stone was first invented, and see just how culture was distributed then, what types there were, and what were their chief characteristics. Nevertheless, it has been remarked that many of the surviving cultures we call primitive, have traits similar to those of the paleolithic cultures. Thus, some of the Australians were still using stone tools a few years ago, and so were some of the Eskimo. Both the Australians and Eskimo were using, among others, unpolished stone tools that appear paleolithic. It is then fair to ask, if it is not possible that some of the old stone age types of culture survived to the present, or at least that some of their essential traits survived.

This question has been debated a good deal and some extreme views developed, but there is some truth in the assumption. If we consider for a moment the manner in which the cultures of the world are at present distributed, it appears that the most primitive cultures are on the margins, or in the out-of-the-way places, as Australia, the Arctic, South Africa, Patagonia, etc. The zoologists tell us that they usually find the oldest surviving forms of mammals in similar far-off marginal places. Just what may be the causes that bring this about, we do not know, but if it is true of mammals in general, there is no good reason why it should not be true of man, who is in fact a mammal.

From this vantage ground we may then sketch the provisional history of culture. It began with the first distinctly human group, whose cradleland was most certainly Asia. Some of its first great inventions were

stone-flaking, fire-making, twisting of string, the spear-thrower, the harpoon, and the bow. Just when and how they came in, we do not know, but that they were inventions we may be sure, and as such, were occasional accretions to the slender but growing culture series. Yet man was expanding and differentiating, thus spreading out over the earth, carrying his culture with him. So at last the waves of the first great impetus from these initial inventions reached the outermost corners of the earth; but in the meantime many great and new advances were made in the motherland, most of which spent themselves long before they reached these outlying tribes of more primitive folk. So it went on and on, new trait after new trait piling up in the interior, each stimulating the other. Now we see how it is that the culture series can be a unit, or a true continuum, though any given line of racial descent may, by halting and occasional backsliding, get into an inferior position. In other words, tribes may come and tribes may go, but culture goes on forever.

Now our question as to the relation of primitive cultures to our series has been answered. These simpler forms are parts of the same accumulating structure. They are the heads of shoots from the lower section of the trunk, where growth has been slow and obstructed, but they stand before us as so many suggestions of what once prevailed at the heart of the culture tree. We do not mean that they are exact, or even approximate, replicas of the culture of their initial ancient horizons, for even primitive cultures change. They are not static. It is rather in the absence of later appearing traits at the center that the similarity still holds. So whatever the cause may be, these primitive groups as now found on the margins of the world did not invent the later epoch-making traits that now characterize the main body of humanity. We are not now concerned with the question

as to whether they could have done so; it is enough to know that they did not. Our point of view must then be that even this much idealized Euro-American culture of ours rests upon a deeply stratified, crude, and perhaps sordid stone-age foundation. It is an accumulation of the experiences of untold thousands of individuals and is still accumulating at an accelerating pace; and forgetting that such things as tribes and nations exist, we may look upon culture as a growing whole that occupies the earth from age to age like its fauna and flora. We frequently hear the expression "rise and fall of cultures," which implies that cultures come into existence as if from nowhere and then vanish. From one point of view, this may be true, but the overwhelming evidence of which we have just taken a superficial view, indicates that culture grows by accumulation, which implies that little of importance is ever lost. In reality, what rise and fall are the tribal entities, or the political groups that manifest culture. Historians tell us that Rome rose and fell and that the latter was a great calamity; and for Rome it certainly was a misfortune, but there is no reason to believe that any of the important elements in Roman culture were lost. Greece also rose and fell, so did Crete, so did Egypt, and so shall we, no doubt; but that anything important to culture was absolutely lost, there is no reason to believe. The "lost arts" is an enticing phrase and a great deal of fiction has been produced from its inspiration, but our archaeologists have failed to uncover these missing relics. It is true that we do not always know the detail of technique by which the ancients fabricated this or that, but the essential steps are still known. Moreover, the rise and fall we have designated is apparently the life cycle of the nation or other type of political organization. Rome, for example, sprang up like a young oak in the forest, pushed and crowded, sent her roots far, and absorbed culture from every side; but at last

maturity was reached and she stopped growing. Then began decline and decay until at last one fine day she went down before the tempest. So Rome fell, and there was a gap in the historical horizon and some wreckage below, but the forest still stood.

VITALITY OF CULTURE

If culture as a whole is a more or less steady accumulation and if there is little evidence to warrant the assumption that the really important things in culture are ever lost through the fall of nations, then what happens when colonization displaces a native population? The most familiar example of this is the occupation of America by our ancestors. Is it not true that they swept the Indian culture out of the Atlantic States completely and planted their own in its stead? This our forefathers did, but still the Indian left his mark upon them and us. When the Pilgrims landed, steam power was not in existence, gunpowder was in use, but firearms were very crude; printing was just making its way. The level of culture then was vastly nearer the Indian than now, so that he and the colonist could meet on common ground in the more material affairs of life. The colonists had to live in this country and be self-supporting. The Indians were doing it, of course; so they followed the lead of the latter in such matters. Corn, or maize, squashes, etc., had long been cultivated by the Indians, and they knew just how to secure a crop. It was therefore inevitable that the so-called primitive Indian should teach the liberty-seeking European the technique of agriculture and woodcraft. And what happened here also came to pass in other parts of the New World. Thus came we to smoke and chew tobacco, to use chocolate, potatoes, tomatoes, peanuts, and some forty more of our important domestic plants. Those of you who know

the romantic history of French exploration in America, are aware of the ease with which the *coureur du bois* adjusted himself to Indian life. The canoe, snowshoes, toboggans, etc., he quickly made his own and do we not still have them? Again, he adopted many of the Indian names for rivers, lakes, and localities and passed them on to us. The reader can go on adding to this list at his leisure, but we can now be sure that to drop from our own culture everything that is Indian would leave a gaping void. In other words, our forefathers did not sweep the country clear of Indian culture, for a good part of it stuck. In fact, it was only the constant and steady contact with the motherland that saved the early colonists from a more complete assimilation.

The facts are of the same order when we review the history of the Romans in Britain and again the Norman. So it looks as if there is but one way to prevent cultures from mixing, viz., to keep them from touching. Conquest cannot do it unless it amounts to instant extermination. That this should be so is not strange, for the very accumulative nature of culture and its apparent tenacity of life require a readiness to inoculation, diffusion, or perhaps a better term is, susceptibility to suggestion. We now see with a little more clearness, just how it is that political boundaries are not always culture boundaries, for mere contact, though of the most hostile kind, is all that is needed for cultural exchange and stimulus. What is true of individuals is in a sense true of culture, for culture is from one point of view the aggregate of individuality; a man, for instance, grows intellectually by contact with other intellects and in somewhat similar fashion one culture seems to have its life pulse quickened by contact with another. Also political organizations grow by conquests of other organizations, but a culture conquest is always a compromise. Further, a political organization is in itself a trait of culture. We are

emphasizing it in this way because it is uppermost in our minds, whereas culture comes but rarely into view. Then how can political organization, which is a mere trait of culture, set up the bounds and limits for the whole? Naturally, it can not unless it be the foundation of the whole structure. Many have been disposed to so regard it, but we have seen that this is not the case.

So the answer to our question, "Are cultures ever obliterated?" may be formulated by stating that a type of culture as a balanced whole may be overthrown by the ill fortunes of the people practicing it, but unless they are quickly destroyed, many elements of that culture will find their way into the culture of their conquerors.

No doubt the objection will be raised, that though this is all true enough, conditions have changed to such an extent that a colony can now be planted and maintained without cultural modifications. As we have noted, the peculiarity of Euro-American culture is that it has annihilated distance and geographical barriers. For example, we can establish a colony in the Philippines and supply it with every element of culture and keep in daily touch with it. We can do more; we can take up a newspaper with the assurance that every important event in the whole world will be reported. This is without doubt a symptom of culture leveling, but may this not be a special rather than a general movement in culture? If we go backward again to get perspective, we find that all the primitive culture types of the world knew fire, most of them knew the bow, etc. In fact there were even in early times some traits that had gone around the world without making all cultures alike. So it is conceivable that though the whole world adopts the factory system of production, aerial navigation, etc., it may still have important culture differences. Yet these differences are certain to become less numerous as this process continues, at least the present-day trend is for more and more of

our culture traits to become standardized, for trade, as the area of exchange grows wider, necessitates such standardization. But there is no reason to believe that this will soon bring culture itself to one uniform standard. For one thing economic conditions are not the same everywhere and to level these and correct the large misfits in environment will take a long time. But the answer to this question has no great bearing upon our problem and must be largely a matter of individual speculation. It is, however, clear that the tendency of the Euro-American culture type is to enlarge its bounds by overriding distances and geographical environments. Not only are mechanical devices being standardized for the world, but such things as factory systems, labor organizations, sanitary precautions, etc., are also being standardized. Even ethical matters are forced to a uniform standard, because people practicing the Euro-American code go to all parts of the earth and insist upon its observance. This code is best designated as Christian, because it is formulated in the basic doctrines of this religion. We may say then that one peculiarity of Euro-American culture is its tendency to expand its boundaries regardless of the geographical bounds that seem to have been insurmountable to primitive cultures; in fact, it threatens to invade the most outlying corners of the earth.

BIBLIOGRAPHY

Annual of the British School at Athens, vols 6 and 7.

Breasted, James Henry. *A History of Egypt from the Earliest Times to the Persian Conquest.* New York, 1905.

Elliot, G. F. Scott. *Prehistoric Man and his Story.* A Sketch of the History of Mankind from the Earliest Times. Philadelphia, 1915.

Laufer, Berthold. *Some Fundamental Ideas of Chinese Culture* (*Journal of Race Development,* vol. 5, pp. 160–174, 1914.)

Myres, J. L. *The Dawn of History.* London, 1918.

Osborn, Henry Fairfield. *Men of the Old Stone Age, their Environment, Life and Art.* New York, 1915.
Tyler, John M. *The New Stone Age in Northern Europe.* New York, 1921.

PART II

THE FORM AND CONTENT OF CULTURE

CHAPTER IV

THE CONTENT OF CULTURE

In the preceding chapters we made a *reconnaissance* of culture as a whole. We even caught a glimpse of our own culture which, though fleeting and blurred, because of faulty focus, nevertheless gave us the initial perspective necessary to an understanding of culture as a phenomenon. Further, we have seen that the culture of a people is characterized by its outstanding peculiarities, but that sometimes it may prove difficult to distinguish between the cultures of two or more peoples. The brief note we took of the disparities between culture provinces and political boundaries on the one hand and linguistic distinctions on the other, hints at the many special problems we are approaching. So to deal effectively with these questions, we must take an analytic view of the data for culture, and incidentally adopt a terminology.

Recognizing then, that culture is something pertaining to the human group, and that the group may be in one case a nation like the United States and in another, a tiny cluster of huts, as among savages, we must decide upon the limits of a group. To put the question directly, what shall be taken as the group unit? If not the individual but a collection of individuals is the unit for cul-

ture, then we must at the outset find and learn to recognize the group unit. In anthropological literature, this unit is designated as the *tribe,* which is somewhat in contrast to the custom in sociology, where the family is often looked upon as the basic unit. As we shall see later, the family, to the anthropologist, is merely one of many kinds of relationships among individuals within the tribe.

In current speech the word *tribe* calls to mind a primitive group in contrast to a civilized nation, but this need not confuse one, for if we recognize that to be a tribe implies political independence and unity, then a modern nation, like France, is merely an enlarged tribe. Further, history reveals the successive steps by which primitive tribes are welded together into new and larger tribes until national levels are reached, from which it has been inferred that the original unit was a small elemental primitive group. Moreover, it is a curious fact that most of the tribal names in literature are borrowed from outsiders; to themselves all members of the tribe are *the people,* or some approximately equivalent term; all others are foreigners. The unit we seek then, is the group to all of whose members the tribe name will apply. This brings us to another important tribal characteristic and one of the most useful to anthropology, viz., speech; for, as previously stated, wherever a difference in speech is found, one may at once suspect a tribal distinction. So a complete classification of peoples according to speech will reveal the tribal grouping. It may be rightly objected that this is not universal, but the occurrence of two tribes with precisely the same speech is so rare that we need not trouble ourselves with this easily explained transient condition. It follows, therefore, that with the wilder peoples of the world, at least, a classification by speech is of fundamental significance, for when we find a group with distinct speech, we have not only located one of our culture units, but actually defined one of the culture

characters of the group under observation. Yet it should be understood that anthropologists find it unnecessary to draw fine and precise distinctions as to the limits of the group, since when they go out to study the culture of a people they are not, for the time, concerned with what the group *is,* but with what a given aggregate of individuals *do.*

There is still another important index of the group, its habitat, or its geography, nature's setting to man's works. No one now attempts to define the culture of a tribe without due reference to the geography of the case and there are those who go so far as to maintain that nature, in the objective sense of that term, is the determiner of culture. But whatever may be the true relation of the tribe to its surroundings, the primal facts upon which our conception of the tribe rest, and its outstanding characteristics, are political unity, speech uniformity, and geographical continuity.

There are many ways in which the culture of the group may be defined, but all usually mean the same thing: neither more nor less than the aggregate thoughts and deeds of the tribe. Yet to understand culture in its objective aspects, the only way in which we can deal with it empirically, we must, for the time, ignore the tribe as a biological phenomenon; anyway, there will be time enough to consider the biology of the group, when we have once passed in review the phenomenon of culture. Nevertheless, we should bear in mind that when one sets out to observe the culture of a tribe, he meets with a series of objects manufactured by specific individuals within the group, as well as a number of habits and beliefs, of varying degrees of individuality. These, as we shall see later, are the data observed or recorded, which in the aggregate constitute the tribal culture as we know it.

THE CULTURE TRAIT

The field-worker in anthropology begins his study of tribal culture by concentrating upon one or two points. Thus, he may set out to see how fire is kindled, observing that it is made by boring one stick into another, but that these simple looking implements are fashioned according to a specific pattern and that the procedure is likewise fixed as in any handicraft. Yet, it is not enough to say that fire is kindled by wood friction; the individuality of the implements and the accompanying procedures must be recorded and representative objects collected. Thus, the fire-making implement, accompanied by photographs and field notes, becomes the objective record of a unit of observation. Such is, for practical purposes at least, a unit of the tribal culture and is spoken of as a *trait*. This term is also applied to mannerisms and to concepts of whatever kind. Thus the custom of a man marrying his wife's sisters may be observed and, if so, is set down as a trait of the tribal culture. It follows then that a tribal culture is characterized by the enumeration of its observable traits and that the culture of one tribe is distinguished from that of another by differences in these traits. So it was that in a preceding chapter we gained our first notion of what culture is by calling attention to striking contrasts in the traits of Eskimo culture. In any event, the individuality of a tribal culture will be manifest in its most unique traits.

The preceding paragraph may convey the impression that the chief concern of anthropology is to discover queer customs and to note the differences between the respective groups of humanity. While it cannot be denied that anthropological literature is unduly weighted with the enumeration of differences and that the writings of explorers emphasize the curious and unique, to the exclusion of the commonplace, yet the history of anthro-

pology shows clearly that progress in the study of culture has been substantial only in so far as the enumeration of tribal traits has approximated completeness. In fact, it was not until many tribal cultures had been worked out completely that the problems of culture took shape. In short, then, a culture is not to be comprehended until the list of its traits approaches completeness.[1]

THE CULTURE COMPLEX

We are now confronted with a more serious problem. If we mean by *trait* a unit in the tribal culture, then we must discover the nature and characteristics of this unit. When potatoes are shoveled into a bushel measure, we may correctly speak of them as a bushel of potatoes, by which we imply that each potato is a complete and independent unit in itself. Some students of culture seem to have regarded traits as similar independent units, to be scooped up in the tribal measure and dealt with as a mere collection. Yet, when one carefully scrutinizes a trait, he finds, not a clear-cut unit, but a kind of complex. For example, the Ojibway Indians in the vicinity of Lake Superior were observed to use wild rice for food and this was correctly set down as a trait of their culture. Yet, each member of the tribe did not snatch his rice food directly from the plant as do the birds, but received it as the end of a cycle of activities in which he, as an individual, played a varying part. Thus, though the plant is wild, some care was given the plots where it grew; later, the plants were tied in bunches to discourage

[1] For examples of approximately complete data on tribal cultures consult such works as Bogoras, in the *Memoirs of the American Museum of Natural History,* vol. 11, and vol. 12, part 1 (Chukchee); Fletcher and La Flesche, in the *Twenty-seventh Annual Report, Bureau of American Ethnology,* (Omaha); Lowie in the *Anthropological Papers of the American Museum of Natural History,* vol. 9, part 2, vol. 11, part 3, vol. 16, part 1, vol. 21, parts 1 and 2, vol. 25 (Crow); Teit in the *Memoirs of the American Museum of Natural History,* vol. 2, part 4 (Thompson).

rice-eating birds, then the rice was gathered, cured, hulled, winnowed, stored, cooked, and eaten. Incidentally, some of it was exchanged and some given away. The many processes involved required techniques of various complexities and special appliances. But that is not all, for intimately bound up in the whole are property rights, labor obligations, etiquette, methods of keeping time, and a number of special religious observances, prohibitions, and taboos.[2] It is thus plain that if we arrive at an adequate notion of the wild rice trait, we must see it as a complex of many processes, all of which bear a functional relation to the end to be achieved. The name usually given to such a chain of activities is the *trait-complex,* or in this instance, the *wild rice complex.*

Some of the best known trait-complexes are, head hunting, totemism, couvade, tobacco, maize, wheat, dog traction, the horse, use of milk, the wheel, exogamy, sun worship, and blood sacrifice. The reader can elaborate the list according to his experience with the subject. While it is true that the term *complex* is not always used in this connection, it is implied, for the significance and interest of these topics arise from the fact that they are the head-lines for important culture trait-complexes, in the main, typical of the whole content of culture.

THE CULTURE TYPE

At the outset, we spoke of our own culture as belonging to the Euro-American type because, by the comparative method, we discovered that the cultures of some tribal, or national, units were very much alike in trait content. In other words, we find it convenient to ignore political boundaries and to classify the cultures of the world according to their content; for as we have shown, what are essentially the same trait-complexes may be found in a

[2] Jenks, *Nineteenth Report, Bureau of American Ethnology,* part 2.

number of cultures. The milking of cows, for example, the milk-butter-cheese complex, is found in Euro-American cultures and a number of Asiatic cultures, but strange to say, some of the latter have a cattle-complex that excludes the use of milk. Many Negro peoples of Africa use milk, but so little are some of them addicted to butter and cheese that they may be said to have a mere milk complex. As in the preceding chapter, where we imagined ourselves traveling through the contiguous habitats of cultures, we can readily check out the variations in trait-complexes, common among a number of cultures, and reach an objective estimate of the degree to which they approach identity.

This brings us to a question of technique. All such questions are bothersome and should be kept out of sight as much as possible; but as the success of any scientific procedure rests upon the precision and impersonal nature of its technique, a few remarks upon the subject must be endured. The fact is that the trait-complex is a variable and must therefore be treated as any other variable. Two families within the tribe may differ somewhat in the practice of a given trait, but this variation is usually negligible as a deviaton from the tribal norm, the approximate form in which the trait most frequently manifests itself. So again when we compare the trait norms from different tribal cultures, variations may be expected, but these will be easily recognized as mere deviations around a central idea. Perhaps this can be made clear by noting an example from the material cultures of certain American Indians. Between the Mississippi and the Rocky Mountains may be found a distinct pattern of female attire.[3] Yet, each tribe has its variants and in turn the individuals within a tribe show deviations from the tribal style. Each kind of variation can, however, be easily

[3] Kroeber and Waterman, *Source Book in Anthropology*, pp. 312–321.

recognized and the tribal styles determined. The illustration shows in an interesting way the character and distribution of these styles (Fig. 1) and justifies the

FIG. 1.—Variations in Tribal Dress Patterns among the Indians of Western United States.

assumption of a common trait in these tribal cultures. The patterns in themselves also show what we mean by variation of a trait. To complete the picture, imagine

this group of tribes surrounded by other clusters of tribal patterns varying around distinctive types. Though the above illustration is quite material, we could cite many social and religious traits with the same kinds of variability, indicating that we are dealing with a phenomenon that is constant and verifiable.

If now we regard cultures as units, we find them also comparable as variable phenomena, for though absolute identity in tribal cultures is not to be expected, some of them are easily recognizable as mere variants of the same culture form. Thus, by referring again to the illustration (Fig. 1), we find not only a garment pattern distributed among the Indian tribes of this area, but a great many other trait-complexes as well. So if we select at random one of these tribal cultures and, taking up its trait-complexes one by one, follow out their distributions, we meet with the same kind of uniformity as in the case of costume, from which we conclude that we are dealing with a type of culture readily recognizable and definable. Variations around this type will consist in the variations of the trait-complexes themselves, as well as in the absences of certain traits. What we mean is that two tribal cultures may differ chiefly in that two or three trait-complexes are peculiar to one of them. So the incidental absence of a trait here, and the occasional excess of one there, are expected variations around the type. Hence, by type of culture we mean a norm, or standard form, of tribal culture readily distinguishable from others.

THE CULTURE AREA

Our definition of the culture type should be understood as a method of classification by which cultures themselves can be grouped, but, as suggested by the illustration (Fig. 1), the culture type has its geography, since it appears that a trait-complex is not to be found scattered at

random up and down a continent, but localized, or in clusters. From what has gone before, it follows that the segregation of cultures of the same type will form a geographical area, characterized by the type. Anthropological research in the New World has revealed a number of these areas. For example, as stated in an earlier chapter, the United States and Canada comprise nine areas as follows: the Plains, Plateau, California, North Pacific Coast, Eskimo, Mackenzie, Eastern Woodland, Southeastern, and Southwestern areas. We observe, for one thing, that the names used to designate these areas are geographical and, to a certain extent, characterize the territories covered, the significance of which we shall consider later. Further, each area embraces a large number of tribal units and consequently an equal number of tribal cultures; but these many tribal cultures belong to one type, so that the culture area defines the range of the culture type. For South America, our data are less complete, but yet sufficient to reveal similar areas. Turning to the Old World, we find little in the literature concerning culture areas, since it is chiefly the American school that has taken up this investigation; or rather, it was in the synthetic treatment of New World data that these areas were discovered. One may, therefore, inquire if such areas are peculiar to the New World. That they are not is apparent when one scans the data for Central and South Africa, where, though no one has yet attempted to mark out the culture types, it is plain that clusters of a similar kind do exist. Again among the wilder peoples of Asia, we meet with the same suggestions, and so we might continue until the whole of the known world was plotted according to tribal cultures. To avoid confusion, we have passed over the so-called civilized nations as well as the extinct cultures, but it can be shown that even among them we have definable culture areas. We must conclude, therefore, that the culture area is universal,

or that we are dealing with one or more constants and it is to the discovery of these constants that our search is directed.

It will readily appear that the tribal units in a culture area are distinguishable as marginal and central and from hints in the preceding pages, we may anticipate corresponding differences in their cultures. Now the fact is that the drawing of precise boundaries to the range of a culture type is beset by the difficulties inherent in all variable phenomena, for it will sometimes prove difficult to decide to which of two or more culture areas a given marginal tribe belongs. Thus, if we take any aboriginal area in America, and tabulate the tribal distribution of traits, we find that those upon the margins lack some of the trait-complexes common to the central group of tribes.[4] However, it does not follow that these marginal tribes possess a lesser number of trait-complexes, because they manifest additional traits not found at the center and whose true home is in the adjoining culture area. In other words, the tribal cultures lying at the boundary between two distinct culture areas are mixtures, or markedly divergent from the respective culture types. Again, the trait-complexes, as previously noted, will appear on the margins in attenuated form, that is, they will have lost many of the elements they possess at the center. So if we seek the type specimen of tribal culture, we must look to the geographical center of the area.

To define one of these areas satisfactorily, then, one must proceed by a suitable statistical method and tabulate the trait-complexes for the successive tribes.[5] With this list before him, he will have little difficulty in fixing a satisfactory boundary to the area, for it matters little

[4] Lowie, in *Anthropological Papers of the American Museum of Natural History,* vol. 11, part 13; Spier, ibid., vol. 16, part 7.

[5] Spier, in *Anthropological Papers of the American Museum of Natural History,* vol. 16, part 7; Hobhouse, *Material Culture and Social Institutions of the Simpler Peoples.*

to which of the two adjoining areas the most marginal tribal culture is assigned. In fact, some of these intermediate tribal cultures may contain an equal number of trait-complexes from the two adjoining centers. Hence, though the phenomena we deal with are complex and variable, they can be dealt with empirically, reduced to statements of sufficient exactness, consistently classified, and their geographical distribution plotted.

Moreover, what one may suspect is, that the culture area merely defines the coincidence in trait-complex distribution, and that, to understand the case fully, one must observe the distribution of individual complexes. Perhaps the simplest examples of such distributions are to be found in the data for extinct cultures, since for these we have as a basis for interpretation only the surviving artifact and its distribution. Our ignorance of the original tribe and the variability of the complex relieves us of all the above complications. As an example we may cite the distribution of certain types of curious stone ornaments found in the United States.[6] No one yet knows the uses of these primitive works of art, nor the tribal groups to which they belonged, but when their distribution is plotted as in Fig. 2, we discover that there was, on the level of some past culture horizon, an area for these ornaments, and since these are all that seem to have been preserved for us, we may further suspect that they are the remnants of a long extinct culture type. Thus, the center of each distribution falls in the same locality, it being understood that each form covers the entire area included by its boundary. So all the forms will be found in the central area, but in the immediate surrounding zone the number will be three, in the next two, and in the outermost zone, but one. No doubt, if we could turn back the hands of the clock and peep in upon this ancient culture area, we would note a full com-

[6] Moorehead, *Stone Ornaments used by the Indians.*

plement of perishable trait-complexes, among the tribal groups occupying the country bounded by the innermost circle of Moorehead's map, which tended to fade away in the outer zones and at last to disappear altogether; or more correctly stated, were displaced by other trait-complexes. That this distribution of stone ornaments is

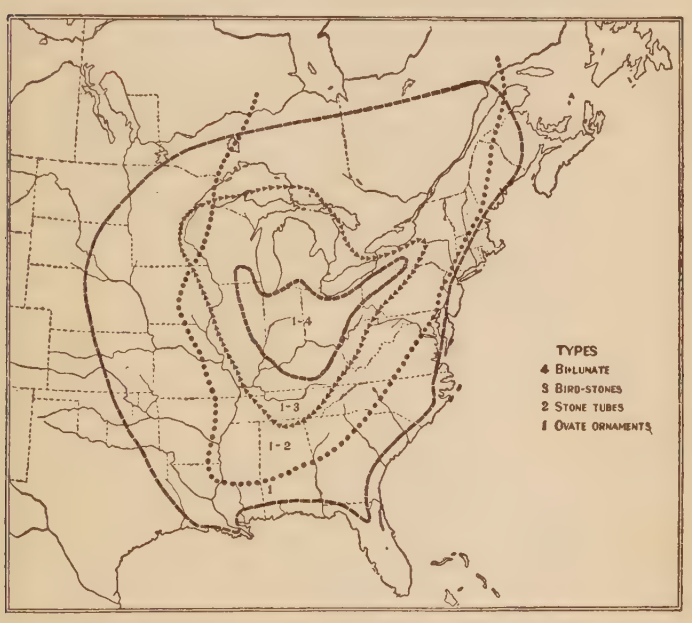


Fig. 2.—The Distribution of Prehistoric Stone Ornaments. Moorehead.

not a unique case can be shown by other archaeological data, for instance the distribution of pottery styles in southwestern United States,[7] where we find successive zones. In this case the archaeologist, Nelson, discovered that, as one traveled outward from a center in the upper

[7] Nelson, in *American Anthropologist,* N. S. vol. 18, no. 2.
For a brief readable statement of the zoned distribution of ceremonial traits in current literature see Mrs. Benedict in the *American Anthropologist,* N. S. vol. 24, pp. 1-23.

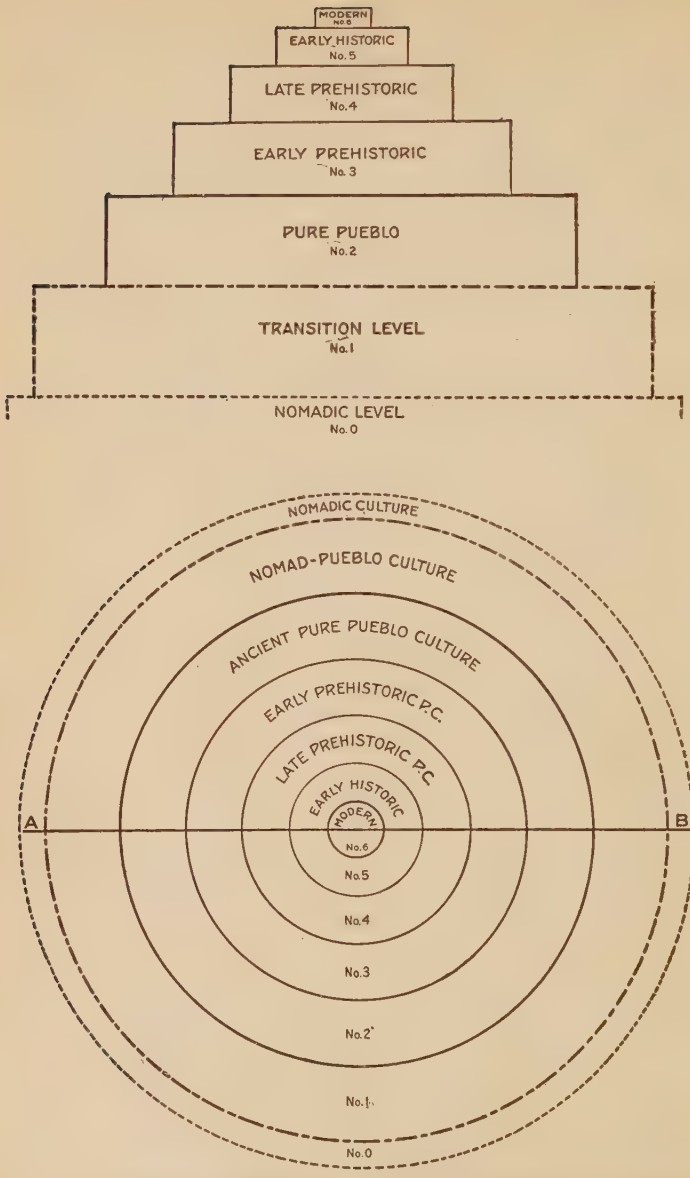


FIG. 3.—Concentric Distribution of Pottery Types in Southwestern United States.* Adapted from N. C. Nelson.

Rio Grande Valley, taking note of the potsherds scattered about on the ground, the several styles of decorating pottery disappeared one by one. He was thus able to define a number of consecutive zones, as in Fig. 3, in the smaller of which all the styles were found. So, as in case of stone ornaments, we find traits tending to concentrate in a center of distribution. These inspiring triumphs of sound method in archaeological research serve to bring home to us the homely truth that the curious stone objects and contemptible potsherds, scattered over the land, are like skeletal remains of dead cultures, which whenever re-articulated, will reveal the outlines of the living forms.

One of the most striking characteristics of the zone-like distributions we have just noted, is their circular character. Considering the variable nature of the phenomena, their regularity is remarkable. However, we must not expect that the boundaries to all culture areas will closely approximate circles, for since culture lives upon the land, it must adjust itself to the topography and to other geographical features. The shapes of the areas are therefore various and their boundaries irregular; a range of mountains here, a desert there, a lake between, etc., will dent or otherwise distort the lines that define trait distributions. Yet, the form shown in Fig. 3 is always discernible, for no matter how elongated and twisted the lines may appear, they still remind one of concentric circles. The culture area, then, expresses a principle of trait-complex distribution to the elucidation of which we shall return later.

THE CULTURE CENTER

In the introductory chapter reference was made to culture centers, the implication being that such were the

*The upper figure presents in vertical section the stratigraphic sequence of the successive layers of pottery and in horizontal section the relative extents of their respective geographical distributions. The lower figure presents diagrammatically the total surface distribution for each type of pottery, the diameter (A–B) corresponding to the base of the pyramid above.

sources from which sprang new cultures. This may be correct, but we must not take it for granted. Our observations so far produce facts of distribution only, but, when confronted with such an all-prevailing type of distribution as we found in the culture area, interpretations automatically come to mind. For example, Moorehead's diagram suggests that the several patterns of stone ornaments first appeared in the central section and spread thence outward in all directions. If so, then the central part of the culture area may be regarded as the point of dispersal, or the center of influence. Our problem, then, is to prove or disprove the correctness of this assumption, or to find evidence to support the inference that trait-complexes do move in this way. Fortunately, we find such proof from an unexpected quarter. In the pottery distribution noted, Nelson discovered that the radii of distribution varied as the time. Thus, the traits confined to the small central section were of recent origin, while those reaching the outer zones were the oldest. This he was able to prove absolutely since at the center he found stratified deposits, one style of pottery above the other, the time-relations for which were obvious. There can thus be no doubt whatever as to the order in which these different pottery traits came into existence. But this sequence in the vertical section, as it were, is also the horizontal sequence, or the sequence of distribution.

It follows, then, that in this case, the center of the area was not only the point of dispersal, but the point of origin, in the usual acceptance of that term. Further, though we have as yet no stratigraphic check upon Moorehead's distribution scheme, there is good reason to believe that the same relation holds. We can go even farther afield and refer to certain researches of which Lowie's study of Plains Indian societies is typical. This author shows clearly that the center of dispersal for these trait-complexes is in the heart of the area, and

while it is not possible to demonstrate their time-relations, in so satisfactory a way as for Nelson's pottery, we find precisely the same kind of distribution. We are therefore justified in assuming that the true culture area is a succession of distribution zones encircling a nucleus and that this center is the point of dispersal from which trait-complexes are diffused.

THE ADHESION OF TRAIT-COMPLEXES

A review of the preceding sections indicates that each trait-complex has a continuous distribution radiating from a center. This can be set down as one of the basic, verifiable characteristics of culture traits. Further, we observed that these trait-complex centers often coincided, resulting in an accumulation of traits in a circumscribed territory, to which we gave the name *culture area*. These two things should not be confused; the former is an expression of culture processes, whereas the latter appears to be a mere accumulation in a locality. One of our problems, therefore, is to discover the nature of this accumulative association of traits. Since we found tribal cultures to be such collections of traits, and classified these cultures by the traits they have in common, the question arises as to the nature of a culture. Is it a mere accidental conglomeration, or is there some functional relation between the several trait-complexes? Thus, when we enumerate the trait-complexes manifested by a tribal unit and speak of them collectively as a culture, we are merely asserting that we conceive them to be related one to the other only in that they pertain to the same tribal unit; so, unless we find some basis for their association other than mere presence in a group, these trait-complexes are without functional relations to each other. In our discussion of the trait-complex, we found its components associated because they had logical and functional relations, necessary or assumed so by the

tribe, as the case may be. In the wild rice complex, for example, a sequence of processes was necessary to produce the food ready for eating. Yet, while it is obvious that rice could not be served unless it was gathered, it is not at all clear that this process must be accompanied by specific ceremonies. Apparently these could be dispensed with without disturbing the remainder of the complex. It appears, therefore, that while some traits in the complex are indispensable, others are not. A review of any trait will make this clear, as for example, the milk complex; some cultures know butter and cheese; some have all but these traits; some milk cows, others goats, camels, horses, or reindeer. Again, maize is now cultivated in Europe and America; in the former, it is used for feeding cattle and horses, but in America it is also a popular human food. In Africa kaffir corn is a great staple, but in America it is fed to live-stock. So, in general, if one follows out the full distribution of a trait-complex, he meets with an attenuation as he leaves its center.

The situation becomes somewhat clearer when we take up a few trait-complexes with superimposed distributions. Thus, a very widely distributed trait-complex is tailored skin clothing, which is, or was, continuously spread from northern Europe, across Asia into America, as far as Labrador. It barely touched the United States and did not reach far down into Europe and Asia. Even the Greeks were content with a rectangular sheet draped over one shoulder. Now it so happens that dog traction, that is, the drawing of sledges by dogs, has also about the same range. If one asks concerning the cause for the coincidence of these two trait-complexes, there comes into mind an environmental relation, since snow and cold are favorable to each, though perhaps not to the same degree. Yet, if we choose complexes of different ranges, the environmental factor is not discernible; for instance,

maize was cultivated by the New World aborigines from Chile on the south to the St. Lawrence on the north,[8] the center of dispersal falling somewhere in Middle America. Pottery also seems to center in the same place and has a continuous distribution approximating that for maize. So we find again a coincidence, but here the range takes us across the torrid zone and into both of the temperate zones. Further, we find both semi-arid and relatively humid regions covered by these trait-complexes. Hence, we cannot say that the environment is the determinant. That the environment plays a part, we shall see later, but that it causes trait-complexes to be coincident cannot be maintained. Continuing our inquiry, then, we observe that in the Old World also there seems to be some correspondence between the ranges for pottery and those for agriculture, but the situation is complicated by the presence of several types of agriculture, on the one hand, and incomplete data for the early distribution of pottery on the other. Yet, in general, it appears that when we consider maize and the Old World cereal complexes, their distributions tend to be coincident with the respective pottery complexes. What then, is the nature of this relation?

Returning to more specific cases, no reason appears why pottery is necessary to maize culture or the reverse. The Californians, for example, successfully cooked similar foods in baskets by dropping in hot stones and on the other hand, maize bread required nothing in the way of a cooking vessel. The most likely explanation, therefore, is that the maize and pottery complexes were evolved in the same center and at about the same time, spreading outward in the universal manner (Fig. 3). Their coincidence is then in the nature of an historical event. Presumably had pottery made its appearance

[8] See Spinden, in *Proceedings of the Nineteenth International Congress of Americanists*, pp. 269–276.

later, its distribution at the discovery of America would have been much more restricted than that for maize. We do in fact find many complexes having the same center as maize but more restricted. So it is the time element that contributes to the association of trait-complexes and accounts for their coincidence. The events that led to their time-relations, or the history of the case, is necessary to a full understanding of the phenomenon. As we shall see later, this is what anthropologists mean by historical explanations for culture.

It appears, then, that the association of trait-complexes is due to causes wholly external to themselves, a subject to which we shall return under another head. One of our problems, then, is to observe what complexes are associated. This is a matter that can be approached by the methods of empirical science. The first attempt of this kind was made by Tylor in 1888,[9] by correlating trait distributions, one with the other. Thus, if one wrote at the head of a column the name of a trait-complex, say maize, and at the head of another, pottery, he could then take up the names of the tribes in order, writing them under each head when the trait in question was present. As we have stated, the result would be that many of the names in the first column would also appear in the second. If this were merely a matter of accident, each tribal name would have an even chance of falling in the second column; but if the correspondences between the two columns were found to be greater than could be allowed for accident, then we must seek another explanation. Tylor first tried this method out with specific social traits, such as the many curious rules and prohibitions governing the social intercourse of men and women. Thus among some cultures the son-in-law must not look

[9] Tylor, *Journal of the Anthropological Institute of Great Britain and Ireland,* vol. 18, pp. 245–272; reprinted in Kroeber and Waterman, *Source Book in Anthropology.*

upon the face of his wife's mother, much less speak to her. First, Tylor made an inventory of the cultures in which the custom is found, and out of some 359 cultures listed, found it in thirty-six. He then followed through the same lists the custom of the son-in-law to reside with the parents of the wife, finding that in fourteen cultures, the husband not only lived permanently with his wife's parents, but also kept out of their sight. A mere chance relation would account for about half as many cases. The point is, then, that the number of times the custom of avoiding the wife's mother is found in a culture, where it is the rule for the husband to reside at the home of the wife's parents, is twice as great as it should be were it merely a matter of chance. In this manner Tylor tried out a large number of marriage and social customs, finding that their coincidences, or their presence in a culture, was something more than an accident. To such associations of trait-complexes Tylor gave the name *adhesions* and a very good name it is; for limiting its meaning to the "state of sticking to one another," when brought into contact under favorable conditions, we have an adequate characteristic of the phenomenon.

So to discover *adhesions* one must proceed to work out the distributions of complexes among the successive tribal cultures and then correlate these distributions. In this way one may discover what trait-complexes are associated. Practically everyone who seriously studies the distribution of culture phenomena uses this method, but the quality of the work depends upon its precision. Recently, a notable research was undertaken by Hobhouse and his associates [10] to discover what adhesions prevailed for food gathering and other material trait-complexes on the one hand, as against the complexes of government, justice, family, warfare, social rank, can-

[10] Hobhouse, *The Material Cultures and Social Institutions of the Simpler Peoples.*

TABLE SHOWING THE RELATION BETWEEN WIFE PURCHASE AND TYPES OF CULTURE

(Adapted from Hobhouse)

Types	Number of Cases	Purchase Present	Ratio
Lower Hunters	61	6	.10
Higher Hunters	67	28	.42
Dependent Hunters	8	3	.38
Agriculture I	36	11	.31
Pastoral I	18	11	.61
Agriculture II	131	69	.53
Pastoral II	20	16	.80
Agriculture III	93	64	.69

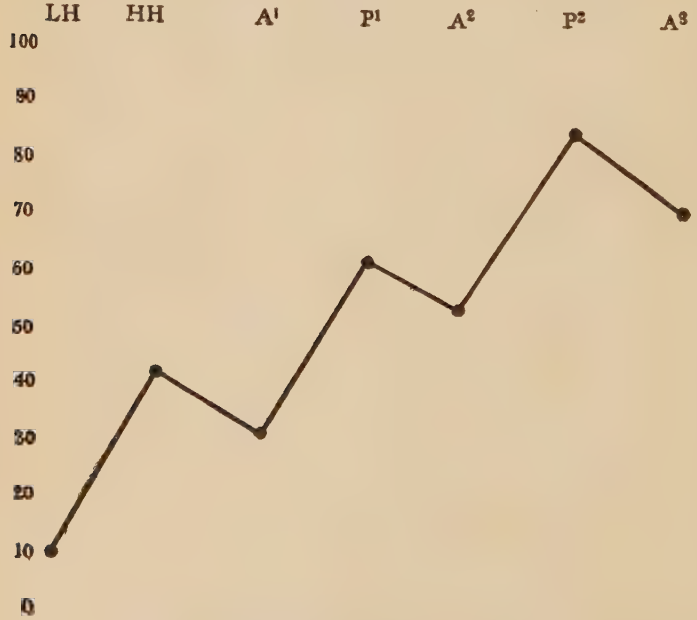


FIG. 4.—The Relation between Wife-purchase and Types of Culture Hobhouse.

nibalism, infanticide, human sacrifice, and property on the other. A great deal has been written on these subjects, but so far no one had taken the trouble to tabulate the traits for the representative tribal cultures of the world and thus be able to make exact statements. Tylor's work, however, deals with what is essentially one large trait-complex, viz., marriage. Thus, as we have noted, he finds that in far too many cases to be accounted for by mere chance, there is an *adhesion* between the custom of the husband going to live with his wife's parents and his avoidance of his mother-in-law, and suspects that one accounts for the other. This may be the true explanation, but, if so, it is merely a relation like that between hulling wild rice and eating it, or one of the logical sequential relations within a complex, as previously noted. Hobhouse has, on the other hand, classified some six hundred tribal cultures, according to their food trait-complexes, under such heads as Lower Hunters, Higher Hunters, Dependent Hunters, Agriculture I, Pastoral I, Agriculture II, Pastoral II, and Agriculture III, and then tabulated the frequency of occurrence for such trait-complexes as the Chief's Power, Purchase of the Bride, Polygamy, Rank of Wealth, Slavery, etc. An illustration of the method is given in the accompanying table and diagram (Fig. 4), where it appears that whereas bride purchase does not tend to adhere to hunting it does to agriculture. In like manner, these authors find that polygamy and pastoral traits show a maximum adherence one to the other, as do human sacrifices with agriculture, infanticide with hunting, wife-lending with hunting, etc. Among negative, or equally balanced adhesions, mention may be made of the two forms of descent, matrilinear and patrilinear, each of which adheres about equally to a number of other traits. What appears, then, is that, as interpreted by Hobhouse, certain trait-complexes all the world over tend to adhere to hunting complexes,

others to pastoral, and still others to agricultural complexes.

Two aspects of the case should be noted. First, the economic rating of the tribal cultures studied is somewhat arbitrary; second, due account is not taken of the geographical distribution. Taking these up in order, the distinction between hunting and agricultural complexes is obvious, so the above-noted adhesions are valid in so far as they are based upon these differences. Yet, what we should like to see are attempts to correlate specific trait-complexes. Hobhouse had in hand the data for this, but seldom used them. One exception is where he shows an adhesion between nobles and slaves; even in simple tribal groups these two trait-complexes show adhesion. Yet, is not this a mere logical complementary relation? On the other hand, can as much be said for the relation between human sacrifices and agriculture? It is true that a logical relation between the idea of propitiating germination and fruitful harvest on the one hand, and the sacrificing of blood, on the other, has been maintained, but the case is weak. Certainly the relation is not like that between nobles and slaves, or between hulling rice and eating it.

Further, if the geographical distribution of the cases cited by Hobhouse be considered, they are seen to comprise two tribal clusters, the Malay Archipelago and Central Africa. The authors could have strengthened their case by data from the central maize area in the New World, for the Aztec, Maya, and Andeans are notorious for the number and monstrosity of their human sacrifices. In each of these areas, however, the sacrifice takes special ritualistic forms and so must be considered as more or less distinct. In the case of Mexico and the Andes, we know that the New World type of sacrifice is distributed concentrically, a form we have shown to be characteristic of trait-complexes in general. To be more specific, then, we should say that one type of sacrifice complex adheres

to maize (New World), another to rice (Malay Archipelago), and still another to kaffir corn (Africa). This presents the matter in a different light than to say that generalized agriculture and generalized human sacrifice show a tendency to adhere. It also brings us back again to the distribution type, for when two or more complexes arise in a center at about the same time, they set out upon their distribution simultaneously and so stick together for at least the greater part of the way. Technically we speak of this coincidence as adhesion.

We could, if necessary, take up the other adhesions noted and account for them now as mere logical, necessary relations, or again, as historic coincidences. But something yet remains: why do so many trait-complexes occur in agricultural areas and not among hunters? This we shall take up later, for the answer lies outside the trait-complex involved. In short, a tribal culture is a collection of trait-complexes, developed and acquired in the course of tribal life; so the association of one with the other can be fully accounted for when we learn the events that brought them into these relations.

BIBLIOGRAPHY

Benedict, Ruth Fulton. *The Vision in Plains Culture* (*American Anthropologist*, N. S. Vol. 24, pp. 1–23, 1922).

Bogoras, Waldemar. *The Chukchee—Material Culture, Religion and Social Organization* (*Memoirs, American Museum of Natural History*, vol 11, parts 1–3, Leiden and New York, 1904–1909).

Chukchee Mythology (*Memoirs, American Museum of Natural History*, vol 12, part 1, 1910).

Fletcher, Alice C. and La Flesche, Francis. *The Omaha Tribe* (*Twenty-seventh Annual Report*, Bureau of American Ethnology, Washington, 1911).

Hobhouse, L. T., Wheeler, G. C., and Ginsberg, M. *The Material Culture and Social Institutions of the Simpler Peoples.* An Essay in Correlation. London, 1915.

JENKS, ALBERT ERNEST. *The Wild Rice Gatherers of the Upper Lakes.* A Study in American Primitive Economics (*Nineteenth Annual Report,* Bureau of American Ethnology, part 2, Washington, 1900).

KROEBER, A. L. and WATERMAN, T. T. *Source Book in Anthropology* (University of California Syllabus Series No. 118). Berkeley, 1920.

LOWIE, ROBERT H. *Social Life of the Crow Indians* (*Anthropological Papers,* American Museum of Natural History, vol. 9, part 2, 1912).

Societies of the Crow, Hidatsa and Mandan Indians (Ibid., vol, II part 3, 1913).

The Sun Dance of the Crow Indians (Ibid., vol 16, part 1, 1915).

Notes on the Social Organization and Customs of the Mandan, Hidatsa, and Crow Indians (Ibid., vol. 21, part 1, 1917).

The Tobacco Society of the Crow Indians (Ibid., vol. 21, part 2, 1920).

Myths and Traditions of the Crow Indians (Ibid., vol 25, part 1, 1918).

Religion of the Crow Indians (Ibid., vol. 25, part 2, 1921).

MOOREHEAD, WARREN K. *Stone Ornaments used by Indians in the United States and Canada.* Being a Description of Certain Charm Stones, Gorgets, Tubes, Bird Stones and Problematical Forms. With Chapters by Arthur C. Parker and Edward H. Williams, Jr. Andover, 1917.

NELSON, N. C. *Chronology of the Tano Ruins, New Mexico* (*American Anthropologist,* N. S. vol. 18, pp. 159–180, 1916).

SPIER, LESLIE. *The Sun Dance of the Plains Indians: Its Development and Diffusion* (*Anthropological Papers,* American Museum of Natural History, vol. 16, part 7, 1921).

SPINDEN, H. J. *The Origin and Distribution of Agriculture in America* (*Proceedings, Nineteenth International Congress of Americanists,* pp. 269–276, Washington, 1917).

TEIT, JAMES. *The Thompson Indians of British Columbia* (*Memoirs, American Museum of Natural History,* vol. 2, part 4, 1900).

TYLOR, EDWARD B. *On a Method of Investigating the Development of Institutions; applied to Laws of Marriage and Descent* (*Journal of the Anthropological Institute of Great Britain and Ireland,* vol. 18, pp. 245–272, 1889).

CHAPTER V

THE UNIVERSAL PATTERN

In the opening chapters we met with good reasons for suspecting that cultures are very much alike in their structure and behavior, and after our discovery of the units, or elements, of the phenomenon, found at least one fundamental form common to all these elements. We found, further, that trait-complexes tend to adhere, suggesting that they are linked in some way, though we found such linking to be for the most part independent of factors inherent in the traits themselves. If we shift our point of regard from the several trait-complexes to the tribal cultures as wholes, we note that notwithstanding these cultures fall into types, a certain similarity holds throughout. We have just seen that all trait-complexes have much in common as well as a common fundamental structure. So as one might say, the aggregates of similar things will themselves be similar; but since trait-complexes vary in kind, and, as we have seen, cultures are distinguishable by the trait-complexes, they have or have not, it follows that cultures differ in their content. Yet, familiarity with cultures soon reveals something we have so far ignored, viz., that after all a tribal culture has a plan or pattern. If we should liken trait-complexes to building materials, then the plan of the house to be built of them would correspond to the pattern of a culture.

Such recognition of culture patterns is not contradictory to what we have observed to be true of the materials that make up these cultures. We are already aware that trait-complexes travel, or spread, and that they often do

THE CULTURE SCHEME

1. Speech
   Languages, writing systems, etc.
2. Material Traits
   a. Food habits
   b. Shelter
   c. Transportation and travel
   d. Dress
   e. Utensils, tools, etc.
   f. Weapons
   g. Occupations and industries
3. Art. Carving, painting, drawing, music, etc.
4. Mythology and Scientific Knowledge.
5. Religious Practices
   a. Ritualistic forms
   b. Treatment of the sick
   c. Treatment of the dead
6. Family and Social Systems
   a. The forms of marriage
   b. Methods of reckoning relationship
   c. Inheritance
   d. Social control
   e. Sports and games
7. Property
   a. Real and personal
   b. Standards of value and exchange
   c. Trade
8. Government
   a. Political forms
   b. Judicial and legal procedures
9. War

this in the company of others, so it was necessary to examine into this relation. What we found is again comparable to what we find in building materials; if bricks are chosen for the walls, then mortar and other elements of the complex follow, but we may choose the same kind of roof our neighbor puts upon a cement house, or any other kind of roof. No doubt this is obvious when we think of houses, but many good people forget it when they set out to deal with matters of culture. But to return to our subject, the plans for houses all call for walls, roofs, floors, and numerous other things, so what about patterns for culture?

In the first place, students of cultures find that the same general outline will fit all of them; thus, we say the facts of culture may be comprehended under nine heads as in the accompanying table; viz., Speech, Material Traits, Art, Mythology, Religion, Social Systems, Property, Government, and War. This outline can be greatly elaborated, if the reader gives his constructive imagination full play. It is, however, full enough for our purposes.

Now, if we take up our own culture and fit the details into this scheme, we see how readily they fall under these heads. So do the old cultures of Rome, Greece, etc. But these and our own are so intimately connected in origin that we should suspect the pattern of one to fit all. On the other hand, there are lowly, simple, crude peoples, like the Australians, who are said to have no culture. If we take literally many of the statements made by contemptuous writers on the subject, this would end the matter; but the facts are otherwise, for turning to the literature of the subject and taking first the main headings in our outline, we find all represented in the supposedly simple life of the Australian. Thus, even among very primitive peoples there are cultures which readily fall under the heads enumerated above.

Now someone may object, on the ground that even

though this be true, the content under each head is so meager as to be contemptible and remind us that the Australian, for instance, went without clothes of any kind, and that, here at once, our pattern fails to fit. Yes, it is true that the Australian was not over-burdened with clothing, but it is not true that he was devoid of *dress*, or that he did not put great store upon it. Ornaments there were in considerable numbers and the septum of the nose was often pierced to carry a wooden button, a practice analogous to the ear-piercing of our own people. In short, he had something to place under this head. If, again, we are told that so crude a savage could have no religion, the answer is not far to seek. Go to a library, take down the books of Spencer and Gillen, there you will find a complex of religious practices that almost defies understanding. Again, when you turn to Australian marriage and relationship systems, you will be more bewildered. The fact is that the whole round of life with the Australian is held in a net of practices so intricate that there is little room for anything else. So the content of his culture is far from negligible and conforms closely to the general pattern we have sketched. But we need go no further; the reader's imagination can call up sufficient details of other cultures to see that the scheme will fit all the cultures known to history.

So far we have dealt with categories of classification rather than with concrete trait-complexes, but, when passed in review, we find many of these complexes identical for all cultures. Thus, all the historic cultures, however primitive, knew fire. They also knew its value in the preparation of food. In every case they knew, or formerly knew, how to chip stone. The principle of the knife was known and the fundamental idea of the drill. Likewise, the art of twisting string, or the making of cord; as to weaving, there was not one that did not understand the fundamental step. The fact that some of them

went no further is not to the point. Still other technical processes could be enumerated, but the reader can add to the list at his leisure. The point is that there are certain groups of technical traits that belong to all cultures. We can go even farther, for there were common beliefs. The belief in a soul or spiritual counterpart of some kind, that defies death, is universal. Again, the idea that evil fortune can be avoided by the strict observance of formulated prohibitions, or taboos, as they are often called, is equally so.

These illustrations are sufficient. We see that not only are the historic cultures, from the most primitive to our own, built upon one general pattern, but in some instances the materials are identical. And though we have dealt with historic cultures, we now know that the same is true of the late paleolithic cultures, for they had fire, chipped stones, drew remarkable pictures, modeled in clay, and buried with their dead objects for the future use of the spirit. Incomplete though this picture of their life must remain, we may be sure that since it fits our one pattern at so many points, it will at the others as well. However, the present value of this concept consists in its emphasis on the fundamental similarities between cultures, whereas we are apt to overstress the objective differences. It is this fundamental similarity which we express by the term pattern, or skeleton of culture. It is true that the skeleton of culture we have offered is a generalized one and so not a stern reality, and yet, it is as real as the osseous skeletal pattern for man as a whole —both abstract generalizations based upon objective data. Further, no one denies that this bodily pattern is part of a more comprehensive pattern for mammals as a whole; and in just the same way, one must admit that the culture pattern expresses the fundamental lines of the evolution of the phenomenon itself.

Now we have, as it were, set up a few categories which,

taken together, seem to cover the entire range of culture content. Thus, under speech we may include language, sign-talk, gesture, and all forms of writing, and so far as we now see, something under this category will be found in every culture. Yet, the several tribal cultures will differ in the kinds and number of trait-complexes falling under this head. If we turn to art, the facts are similar, and so on through the series. Nor need we trouble ourselves with the question as to whether culture was always laid out in this way, for that would lead us off into a search for other patterns, a problem to come later. Moreover, the pattern we have sketched here is the human pattern, the justification for that term resting upon usage, for by man is usually meant a mammal that possesses a culture conforming to this pattern.

It appears, then, that for the different cultures these categories show a wide range in content. Further, since under each category we find the familiar trait-complexes, all more or less interlocking, we may properly speak of the pattern as made up of *culture complexes*: speech, art, religion, etc. Again, what happens in the evolution of culture is an elaboration and enrichment of these complexes, a process which we sometimes speak of as progress. We can now comprehend why it is practically impossible to draw satisfactory distinctions between primitive and higher cultures, other than that they differ in complexity, or richness of content. It looks as if, after all, man's activities were deeply channelized, for though we have among us dreamers who fancy a time when the whole language complex, for example, will be transcended and thought speak to thought direct, yet so far there are no indications but that if the unexpected happened, the mechanism employed would still rest upon language or pictures, as have all known traits in the speech complex. The very existence of a universal pattern implies a fair degree of rigidity in limitations and

asserts that every culture is predestined to keep within these bounds. No doubt this will come as a shock to many and arouse the resentment that all feel toward limitations to personal freedom; nor is it particularly stimulating to realize that these limitations, marked out ages and ages ago, seem to have held fast and firm through all the centuries to this very hour, for what signs are there to encourage the belief that the bars will be lowered! Still, the outlook is not so forbidding as it seems, for within the bounds of the pattern are spaces for tremendous expansion. It is in fact the wonderful flexibility of the culture pattern that makes it nature's masterpiece.

CULTURE COMPLEXES

We may now inquire as to the significance of the nine topical heads in the foregoing outline of the pattern. As we have said, they are conventional and arbitrary, and yet they are the results of experience, for everyone who draws up a scheme to cover the culture of a people will arrive at similar divisions; so there must be some basis to these topical heads. Moreover, when critically examined, we see them as basic concepts of human activity. For example, the term *war* stands for something instantly recognized, nor can an anthropologist conceive of any existing culture, however primitive, in which the idea is not equally definite. All languages that have been recorded have a term corresponding to the word we use. It is, of course, obvious that there will be some difference of opinion as to the absolute scope of such a concept, but if one notes that the dispute is always between the concepts as formulated, the suspicion arises that the specific trait-complex in question is mixed, or overlaps other traits, an aspect of the phenomenon we shall revert to later. Yet, in the main, the nine heads in our outline do express the fundamental and embracing

concepts in culture. The simplicity of the classification invites objection from those who are fond of contemplating the complexity and largeness of human affairs, for they will say that no such simple scheme can in any way serve as a statement of culture. But such assertions merely dodge the issue, for in everyday affairs we ourselves deal with the problems of the hour in similar broad concepts and do it effectively. Further, there is a reality underlying each of these concepts, even though not immediately apparent. And as to complexity, we recognized that at the outset, finding that culture comprises trait-complexes, and these meshed, or felted, under culture complexes, which is the name we have given to these divisions of the pattern scheme.

These complexes are conceived to be also entangled into a whole, known as the tribal culture. This should make it clear that the simplicity of the scheme is only apparent, but that on the other hand, there is a unity in culture as expressed by the basic concepts. However, the problem of the pattern is one of the most fundamental we have yet encountered and so deserves fuller treatment. To this end, we shall review in some detail the status of the culture complexes and thus be better prepared for the further consideration of culture processes.

SPEECH AS A CULTURE COMPLEX

Some confusion may arise in the mind of the reader by the use of the word *complex;* because of the great popular interest now shown in questions of psycho-pathology and the vagaries of mental life, and especially of the startling assumptions of the Freudianists, the word *complex* has come to a stand for a specific tort or twist to the acts of the individual. But it is in no such sense that the term is used here, though there is a gross analogy involved in that the psychological activities in which the Freudianists specialize, also appear as a tangle of obscure factors.

Yet there is nothing common to the two conceptions, for in culture we are dealing with a tribal group and not attempting to analyze an individual. It is, therefore, with speech as a complex of culture elements that we are now concerned.

In the first place, we are using the term *speech* in a special sense, for it is usually taken to be a vocal means of communication; yet, as such, speech is but one form of communication, for pictures and true gesture language are others, and we may add writing, which in Euro-American cultures is merely a kind of silent vocalism. So we shall speak of oral communication as *language,* and communication in general as *speech.* But the point to fix in mind is that back of all there is a basic activity whose purpose is communication. The importance of this function in the life of the tribal group can scarcely be overestimated, although its exercise is not necessarily peculiar to man, for on *a priori* grounds one can scarcely conceive of an animal community without some degree of communication. Every flock has a leader, as we say, and everyone knows that this implies that cues are taken from some individual. Anyway, notes of alarm are communications, and no matter how unintelligent psychologists may prove these to be, they at least serve to call out a response similar to that given by the real danger. All this suggests that communication, in its broadest aspects, is common to most animals, and particularly those that are socially inclined. So the distinction between man and the animals is not to be found in the mere fact of communication, but in the methods employed. Nor is the mere matter of using the voice as one of these methods unique, for animals do that also; what are then, peculiar to man are languages, pictures, and writing.

Starting then with the most basic, or mere communication, we note that what is sought is to bridge the gap

between memory and experience. Thus, if when one is about to leave the house, someone says, "key," you reach into your pocket to assure yourself that this very essential object is in its accustomed place. The sole purpose of this specific vocalization is to call up experiences of the past, and in some mysterious way, about which psychologists are still quarreling, set off the right response. Yet, this is not all, or even the most important phase of this relation, for by means of an efficient system of communication one can dispense with a large part of the experience itself; as in this instance, one needs never to have been locked out himself to have the idea, for the experience can be communicated to him second hand, and so get into his memory by a convenient short-cut. The advantage of this to the individual is very great, since it enables him to gather experiences in abundance, just as if his senses were spread over a portion of the earth instead of merely over his own skin. No doubt most animals also enjoy some such extension of their experience, but nothing to compare with man. It is, however, in the group that communication works to best advantage, for specialization is made possible by it, and it is these short-cuts that are most conspicuous in culture. Indeed, someone has defined progress in civilization as purely a matter of short-cuts. However this may be, it is true that we can all enjoy and safely use a fire in the hearth, without wasting our time re-inventing all the complex of processes by which this unit of human experience was attained. So it appears that the great function of communication lies in the fact that it makes such a thing as tribal life possible and particularly culture, since the individuals in the tribe can cooperate effectively only when ideas can be passed along in this way and cues readily given for setting off the right responses.

Turning now to language as a means of communication,—a tool as it were, we need not be told that it is a

matter of sounds, and a very complex habit, but one that every normal individual readily acquires at the proper period of life.[1] What goes on inside of one's skin when there is speech, is a problem in psychology, something with which we are now not particularly concerned, for our interest lies with the kind of a machine or tool that is used to bring about vocal communication. This mechanism we speak of abstractly as language. However, the concrete realities are so many separate languages, distinguished by differences in content as well as in grammatical structure. In an earlier discussion of language in culture we called attention to the relation of the tribal unit to uniformity in language, which we now see is the prime requisite to communication and so to the continuity of culture. A great deal of study has been given to the separate languages, which is again a special department of science not to be summarized here, but some of the results of linguistic research are most illuminating. All languages, for instance, are similar in form. What they do, may be expressed as conveying images and their relations to one another; or, in other words, what is sought, is to reproduce what is in the speaker's mind, within that of the hearer. Since, however, it is only ideas and relations between them that are experienced, all that is required of the mechanism in question is, that it be able to qualify each of these to the degree required by the situation. Thus, for all ordinary purposes such terms as white, gentle, tall, swift, and their kind are adequate to give a workable image of a horse, but a zoological concept of a horse may require much sharper and more detailed definition. It is conceivable, therefore, that languages will differ in the minuteness with which they can convey the mental content for any particular case, according to their histories and the demands that are made upon them. On the other hand, language

[1] Sapir, *Language;* Marett, *Anthropology.*

never carries the whole image, but only salient parts of it. The telephone, for example, does not faithfully carry all of the voice, but enough to give the mind the cue; or, a better illustration is found in handwriting, where a word very vaguely scrawled is recognized, provided certain distinctive letters appear in the right place. In much the same way, the mind gets a clue to what is being communicated and fills out the thing from its memory store.

All of these points are far better presented in the literature of linguistics, but we should see them in their gross outlines to realize that a real language is merely a mechanism, and far from perfect at that. Also, that it is susceptible of frequent adjustments to meet new demands for accuracy of communication. Finally, we see that not only are all languages set up on the same lines, like so many watches in the jeweler's show-case, but that they are based upon that which is fundamental in the mind.

As we have hinted, Euro-American writing is a kind of visible speech, an invention by which sounds can be suggested by symbols. But before going further with this some consideration should be given gesture language. No doubt the reader has heard a great deal about such methods of communication and read many fanciful theories as to how gestures were the mother of all languages. But we are not now concerned with the origin of languages, though we know them to be inventions. Yet, true gesture speech is not based upon the spoken word at all, but upon ideas and their relations. It thus goes back to first principles. By far the best example of such communication is the now all but extinct "sign talk" of our western Indians.[2] In defining culture areas we had occasion to refer to the large number of separate tribes in the Great West, and this, we now know, is correlated with differences in language. But as these tribes

[2] See Clark, *Indian Sign Language;* Seton, *Sign Talk.*

were constantly meeting each other, and travelers went from one to the other for pleasure and for profit, there was need for an inter-tribal language. Thus the situation was much what it is with us in our larger culture area, where various attempts have been made to construct an international language, but in these we have tried to follow our traditional phonetic styles, producing such monstrosities as Esperanto and Volapük. The Indian, on the other hand, took to gesture and pantomime. No adequate presentation of this method can be made here, but the fact that it was directly intelligible to all these tribes should of itself indicate that it was based upon ideas, just as is a spoken language. On the other hand, the special form of sign language we have devised for the use of the dumb is merely a kind of phonetic writing for our own language, and is not, therefore, in any way comparable to that of the Indian.

As to whether true gesture speech came before vocal speech is an academic question. From what we know of languages among the Indians, their sign talk came long after their spoken languages were set to present standards. It appears here then as the solution of a practical problem and there is good reason to believe that it developed within the past five hundred years. Gesture is, however, a universal accompaniment of speech, where it plays a rôle of varying importance. Some gestures are very widely diffused among mankind. Yet there is no good reason for assuming that speech grew out of a gesture system, since each has a distinct biological base; but as to which can claim priority as an invention, it is useless to speculate.

At last we come to another form of communication, one quite distinct from either speech or gesture. One may convey the content of his mind by plastic and graphic representation. These representations may be characterized as pictures, the concept being the same in

each. This method is undoubtedly old, for it appears in cave cultures and more or less among all living primitive peoples, though we do not usually look upon the method as being a form of language, since sooner or later the esthetic element in the complex comes to be emphasized. Yet, even so, the purpose of the picture is to give the observer something that will set in motion memories, etc. Here, however, we are concerned with the making of pictures in which the emphasis is placed upon the conveying of ideas, as when an Eskimo outlines on a strip of ivory a succession of drawings representing his hunting experiences. More familiar to American readers, perhaps, are the pictorial devices of our western Indians, which when placed upon robes, or other convenient surfaces, depict the war exploits of the owner. In all such cases, however, it is not mere representation that is aimed at, but a uniformity of convention within the group to give the pictures a code value. When such a level is attained we have picture writing. For example, early Egyptian writing is believed to have been based upon picture writing. In America, we also find prehistoric writing in Yucatan with an obvious pictographic base, and though this writing was extinct when the New World was discovered, a related form of picture writing was in use in Mexico. Many manuscripts of this kind have been preserved, among which we find lists of tribute to be exacted from subject territories, containing pictographic names of the towns, often upon a kind of map, with pictures of the materials to be returned, accompanied by number signs to indicate the quantity. In all this, however, there is a great deal of coding.

Such picture writing has been heralded as the mother of phonetic writing, or all writing. As we have seen, there are some reasons for believing it extremely old, but there is another curious fact. Wherever we find a well-developed picture writing as in Egypt and Mexico,

shifts to a phonetic system are in evidence. There is nothing very strange about this, because sooner or later a way is found to express a word, or rather, the spoken word comes to be used as a reading of the picture. Anyhow, we find in these writings the use of symbols to represent sounds. For example, if we take two such words as *bow* and *beau*, the scribe might use the picture of a bow for both, the context or some special method of designation serving to make the meaning clear. The special treatises upon writing [3] will give the details of these shifts, but we see in them confirmation of the primary place given to spoken language in the culture of men, for even though there are several methods of communicating other than by the voice, none of these develop far without becoming systems to convey speech. In other words, true writing did not develop until it became desirable to have a mechanism that would convey the spoken word instead of the idea. What this means is, that spoken language had run so far ahead of all other methods of communication, that it imposed its form upon everything, for every language fixes a style upon intercourse and procedure, social and ritualistic, that must be reckoned with in all interpretations of culture.

The attempts of the several cultures to adjust their forms of writing to the new demands of intercourse are especially interesting. Thus, the Chinese have a method that is clumsy because it still rests upon a distinctly ideographic foundation and all the remarkable advances of this people have resulted in complicating this system rather than otherwise. Yet, modern tendencies to meet further demands in an age of rapid printing are recasting this writing, so that it may in the near future become a true phonetic system. Again the Semitic peoples seem

[3] See Mason, W. A., *A History of the Art of Writing;* also Budge in Kroeber and Waterman, *Source Book in Anthropology,* pp. 447–461.

to have taken the old Sumerian cuneiform writing and made out of it a syllabic symbol system, which is one step nearer a true phonetic writing. Then came the step to direct phonetic writing, which reaches its modern level at the hands of the Greeks. Incidentally, it may be remarked that the printing-complex which so distinctly characterizes Euro-American cultures is an outgrowth of the phonetic system, for though the Chinese knew how to print and to make paper long before, their form of writing prevented their realizing the full benefits inherent in these great inventions. To the consideration of such processes we shall return later.

Why the spoken word came to have such an ascendancy over other forms of communication is not difficult to conceive. For one thing, one's vocal apparatus was always at hand and could be used when the hands were otherwise occupied; but above all, it had in it the possibilities of great speed with an insignificant expenditure of energy, and of all methods it was the only one that could keep in sight of the train of thought. No doubt, it is due to this that one often finds language taken as distinct from culture, as when anthropologists say there are three aspects of mankind, race, language, and culture. Now while there is good ground for thus emphasizing the place of language in human affairs, the reader is apt to lose sight of the fact that even our methods of communication are inventions, or trait-complexes, just like tools. The force of this is seen in current events. Thus there is a wide interest in telepathy, which is not wholly due to the occult, many people being attracted to it because it suggests a new method of communication, one that makes words unnecessary. Then again the great change the moving picture is bringing is rarely noted, for in some respects we are reverting to the use of pictures once more, a new, most realistic, and most rapid form of picture writing. These hints should bring home to everyone the

external and conventional character of all our complicated systems of communication and awake us from the delusion that we at last have attained the perfect method.

In conclusion, then, we see an important complex in culture whose function is to communicate between mind and mind, and further, that the mechanisms that make up the separate cultures are based upon what is in the mind, or upon things and their relations, and so it is inevitable that there should be one universal pattern for this complex.

THE MAKING OF TOOLS

Another division of the scheme we have drawn up for culture is, for want of a better name, spoken of as material culture. No one has as yet suggested a satisfactory substitute for this term, but technology comes nearest meeting the requirements. However, the idea that well expresses the dominant note in this complex is *tools*. If it is objected that this is too specific in import and the large place food plays in material culture is cited as a case in point, it can be properly retorted that food usually passes a gauntlet of tools ere it is eaten. Further, tools are so universal that man has been defined as the tool-using animal, though it would be nearer the truth to say that he is a tool maker, for it is the devising and making of tools that sets man off so sharply from the animals. While one usually thinks of tools as consisting of wrenches, saws, hammers, screw-drivers, etc., we are now using the term in a broader sense, conceiving tools to be material constructs both to supplement and to protect the individual. It is not, of course, our problem to enumerate all the kinds of tools man has devised, or the specific ends to be accomplished by their respective uses. In the main, they are employed in feeding, transporting, housing, and clothing mankind. What

we seek is a more fundamental relation between man himself and these detached constructs. Looking at them from this angle and fixing our attention upon the most widely known types of tools, it appears that for the most part they are adaptations to the hand, or are designed to be used in the hand or placed with it; but what is even more obvious, are made by the hand. The muscular build of the arms and hand is then one of the bases upon which the tool complex rests, and further it is the main base. While it is true that man does things with his feet and teeth, the manipulation begins with the hand. Some of the older writers upon culture have carefully analyzed and classified tools, arriving at certain basic forms from which the more complicated appliances were developed.[4] Later these schemes were ruthlessly set upon by the anti-evolutionists in anthropology who saw in them attempts to explain the observed sequences as due to innate factors; but these extremists overlooked one important aspect of the case: they failed to see that, after all, in the invention of such things one step follows another; we do not find self-filler pens preceding the paint brush, nor locomotives before carts. The point these early investigators were striving for was the accumulative, progressive nature of culture. Thus, they have shown that the same fundamental ideas that underlay the stone flake, also underlie the steel knife, and all cutting tools. What they did not see with equal clearness was that upon this basic idea was built a gigantic complex, which was held true to its form by conditions outside of man's control. The facts did not signify that man just stumbled upon the idea once, but that the immutable laws of nature made it inevitable that he should come around to this idea again and again. But this phase of the problem can best be considered under the head of

[4] Mason, O. T., *Origin of Invention;* Tylor, *Early History of Mankind.*

invention. So we find that the early students of culture have at least shown us where this tool complex rests, viz., upon hand and limb movements, such as striking, scraping, and twisting. The equipment for these man carries with him in his body, and so they are ever present as suggestions for the devising of tools, and as the tools must be adjusted to them, we may expect all to be of one general type.

THE FAMILY COMPLEX

We turn next to the parts of cultures that have to do with the relations of individuals within the group and, around these functions, what is spoken of as social organization. The distinction we just made as to speech and tools may apply here, since these complexes are not primarily dependent upon objective appliances, though they often do serve as means and points of regard in the relation of one individual to another. Further, one can conceive of the same form of marriage being equally at home in hunting and farming cultures as well as in a stone age, a bronze age, and one of steel. The reason is that the essential aspects of this phase of culture are in need of nothing supplementary to man's body and mind, unless it be speech. It is important, however, to bear this in mind constantly.

Sociology conceives its most important problems to arise from what we have here considered a mere socio-complex in culture. As reflected in current literature the fundamental problem is to account for the origin of this complex, the assumption being that all else is subordinate to it. There is nothing far wrong in this attitude, for it is in the main a matter of necessary specialization, as when one studies politics, government, law, etc. If sociology does go wrong, it is when it becomes over-enthusiastic and seeks to make this complex-pattern the

pattern for the whole of culture. Even then, there is a great deal to justify this attitude. We have seen how language plays a formulating rôle in all aspects of culture, some enthusiastic linguists claiming that it is language that rules all thought, and so everything. And it is in much the same way that one finds the social traits at work when culture activities are in evidence. So, confronted at every turn by social traits, our logical machinery is apt to slip its gears by confusing the concrete and the abstract; and since for its own purposes sociology must lift the socio-complex out of culture, just as the microscopist isolates certain tissues by staining processes, so when dealing with living concrete experience the sociologists should recognize that many other aspects of culture are present, for it is always easy to take for granted that, what one is most interested in, is the primary phenomenon. Yet there is no denying that the traits by which individuals get on, one with the other, have a place analogous to that of speech and so there are good grounds for assuming that these social complexes are quite necessary to effective communication.

However, to enumerate the many forms of social traits found in culture would take us too far afield and would merely repeat what has been well done elsewhere. Nor can we stop long enough to review the whole of the socio-complex, but may profitably give passing attention to the family complex. Moreover, there are traditional grounds for this emphasis, the human pair having been time and again taken as the only natural group in social organization. Even primitive man everywhere has been disposed to assume that mankind must necessarily have descended from an original pair from whom they inherited a right to culture, and in much the same fashion still, social origins are sought in the relations of a single male and female. Then it is assumed that the creatures destined to become men once went about in a non-social

way as breeding pairs. Sometimes it is conceded that a single male consorted with a number of females, thus setting up something like a barnyard herd. This, however, does not greatly alter the situation. With this anti-social state as a starting point, many ingenious guesses have been offered as to how man reversed himself and became extremely pro-social. This is sometimes conceived of as a compromise by which the tribal group was formed to embrace the original natural paired groups. So in the older literature this antecedent pairing was taken for granted, but a brilliant contemporary writer on sociological subjects has sought to demonstrate the improbability that culture was started among isolated human pairs and has made a good case for it.[5] To him culture is something more than a mere sexual pair. As we have seen, the whole of culture involves a high degree of individual specialization, vastly more than the limits of the sexual pair would tolerate. It is therefore far more consistent to assume that culture began with a troop containing both males and females. The possibility of this is seen in the behavior of certain anthropoids, particularly among the gorillas recently observed by Carl Akeley to be roaming in parties made up of both sexes. Nevertheless, the human pair appears to be a kind of pivot in culture, and one need but scan the literature of sociology and anthropology to become aware of the bewildering complications revolving about it. Someone has said that man is obsessed with an insatiable curiosity, and as we look back over the outline we have sketched, it appears that the content of culture is largely the outcome of this incessant prying into the ways of nature, nor is it strange that above all things man has shown a universal tendency to tinker with the relations involved in the family pair. The outcome of this is a wonderfully diverse network of tribal customs and habits. Yet with

[5] Giddings, *Principles of Sociology.*

all this diversity goes a deep similarity, for the most distinctive factor is sex. No doubt those who attempt to explain everything in its terms have allowed their imaginations to run riot, but we should note that it *is* the outstanding difference between men and women, which no culture, however primitive, can ignore. Among socially inclined beings it automatically sets up two classes within the group. So it must have been this situation that challenged man's curiosity at the start, invited social manipulation, and continues to do so. This does not mean that we should look upon the whole structure as merely sex. Not at all. What we see is a line of cleavage in the group, the men on one side, the women on the other, but both socially inclined and with paramount interests in common.

Another idea that has been given a large place in theories of origin is "prolonged infancy." The fact that for a relatively long period the child is dependent upon one or both the parents, in reality upon the group, is doubtless significant. It at least presented a problem, or a situation, for culture. Yet the idea presented by the originator [6] of the phrase quoted above was of a different sort, viz., that this long period was what made the acquisition of culture possible, or guaranteed its continuity. However, this is a phase of the subject to be treated in a later section. So, turning again to the socio-complex, the view is plausible that here is a biological condition basic to a number of traits. Further, it will fall heavier upon the mother side of the group. Thus we come back once more to the fundamental distinction.

Turning now to the tribal group, what we see is an ever-present and obvious condition in the concrete, which will not let the tribe forget its presence. It may well be that a lot of folk-ways, whose object seems to be to camouflage or distort the fundamental schism of sex, are

[6] Fiske, *Cosmic Evolution,* or in *Outlines of Cosmic Philosophy.*

expressions of a hidden desire to escape from the obviousness of the situation, to gloss over what everyone knows is an ever present reality. Anyway, the whole order of socio-complexes we observe in culture are projected as in two categories, men's ways and women's ways. The reader, with even a casual knowledge of ethnography, can turn to the pattern outline at the opening of this chapter and beginning with material complexes run down the list setting on one side things that are more pertinent to men than to women. Yet it does not follow that analogous trait-complexes will always be found on the same side as we pass from culture to culture. In fact we find some very unexpected, and to our minds, absurd shifts; thus among the Hopi Indians the men weave cloth and spin; among some Eskimo tribes the women fish, not the men; with the Plains Indians it was the women who danced the scalp dance and waved the gruesome trophies, while the men merely looked on; so we might go on at length, but the climax is reached in the couvade where the father lies-in after childbirth instead of the mother.[7] Turning to our own culture we note that in popular parlance there are but two ways of dividing the duties and responsibilities of women, the civilized way and the savage way. We look upon our way as the civilized way, all others as the signs of savagery. So the American speaks with contempt of the Indian who allows his wife to chop the wood for the fire, but forgets about his own woman slaving in the laundry. In short, it is partly a matter of accident as to how culture is adjusted to the two parts of the group, but that they are so apportioned is inevitable.

It is a truism that the human mind needs a suggestion before it acts, and while the response is far from inevitable, the frequent repetition of the suggestion greatly

[7] See Roth, in the *Journal of the Anthropological Institute of Great Britain and Ireland,* vol. 22, pp. 204–243.

weights the probabilities. But with an ever-present suggestion of class distinction, like sex, we may expect a marvelous ramification of classes and specializations, though all more or less biased by what has gone before. So here also we find a relatively simple but fundamental relation underlying the complex, imposing its form not only upon its own complex but upon the greater part of culture itself.

SUMMARY

Now we have sketched the parts of our culture known to us as tools, speech, and the family to bring out one important contrast. As we have said, man is always equipped for talk, but his tools are so many impedimenta that must be carried about and kept at hand for every emergency. An analogous distinction runs through all culture complexes, for while we think of art as objective, the individual carries the most essential parts of it about in his mind, though he is, it appears, far less independent in this respect than in the matter of language. Yet this difficulty has been partially met by such compromises as the legend and the song, language being made the carrier of the whole, quite independent of tools and paraphernalia.

In matters of mythology, philosophy, science, etc., language is again requisitioned; but the relation is clearest when we turn to religion and social organization. Here the important things are not material objects, but rituals, prohibitions, rules, etc. One thousand years ago, but a small fraction of mankind were given to systematic writing, yet they maintained many elaborate ceremonial procedures, complicated marriage systems, etc., without difficulty. The reader need not be told how this was done; language carried the burden of it. Even in our own lives we value most what we can "carry in our heads."

In a similar way we could show a distinction in each of the culture complexes, but the reader can be spared the tedium of it, for it appears that the whole series of culture complexes can be resolved into supplementary constructs (tools, etc.) and the neuro-muscular mechanism of man. Hence, one need not be surprised that such a bewildering maze as civilization turns out to be a matter of bulk rather than of complexity, for we find in it everywhere the familiar trait-complexes, each fashioned upon the same general lines. And what is even more significant, wherever a group of men and women are congregated, there one will find the essential activities upon which all these complexes are built. It is because the same relations in communication, thought, and tools everywhere prevail that the cultures of the world have the same form and manifest the same processes. This is what is meant by the universal pattern.

BIBLIOGRAPHY

Budge, E. A. Wallis. *Egyptian Hieroglyphic Writing.* In Kroeber, A. L. and Waterman, T. T., *Source Book in Anthropology* (University of California Syllabus Series, No. 118, pp. 447–461, Berkeley, 1920).

Clark, W. P. *The Indian Sign Language.* Philadelphia, 1885.

Fiske, John. *Cosmic Evolution.*

Outlines of Cosmic Philosophy. 2 vols. Boston, 1890.

Giddings, Franklin H. *The Principles of Sociology.* 1909.

Marett, R. R. *Anthropology.* New York, no date.

Mason, Otis Tufton. *The Origins of Invention.* A Study of Industry among Primitive Peoples. London, 1901.

Mason, William A. *A History of the Art of Writing.* New York, 1920.

Roth, H. Ling. *On the Signification of the Couvade* (*Journal of the Anthropological Institute of Great Britain and Ireland,* vol. 22, pp. 204–243, London, 1893).

Sapir, Edward. *Language. An Introduction to the Study of Speech.* New York, 1921.

Seton, Ernest Thompson. *Sign Talk.* A Universal Signal Code, without Apparatus, for Use in the Army, the Navy,

Camping, Hunting, and Daily Life. The Gesture Language of the Cheyenne Indians, etc. Prepared with assistance from General Hugh L. Scott. New York, 1918.

TYLOR, EDWARD B. *Researches into the Early History of Mankind and the Development of Civilization.* New York, no date.

CHAPTER VI

HOW TRAITS OF CULTURE ARE ACQUIRED

At the outset we directed our attention to culture as independent of human beings, an attitude we still maintain, for we must at least thoroughly comprehend the objective phenomenon, before we can hope to take up its subjective aspects. So we will not now concern ourselves with the origin of tribal cultures, but merely accept them as realities after they appear on the scene, for our present problem is to understand what they are and how they behave. To the former we have given more than passing attention and are thus prepared to examine the behavior of the phenomenon. As we have seen that by far the most tangible and uniform of all are the trait-complexes, it is to these that major consideration will be given. In the discussion of these complexes, we necessarily developed their geographical bases and the form of their distribution. We observed that if we set up a cluster of contiguous tribal cultures, any given trait-complex would be found to radiate through them from a center. In other words, its area of distribution could be mapped out, by methods now fairly well understood and its approximate center of distribution determined (p. 55). So we perceive that trait-complexes appear to spread from one tribal culture to another. Our problem, then, is to determine the nature of this process, or to consider the ways in which tribal groups may come by the trait-complexes that make up their cultures.

One way is to invent them, and it is conceivable that two or more separate tribal groups may, if confronted

by the same problem, achieve the same solution. For example, pottery glaze was invented in the Old World, but also appears in the New World in an isolated locality, and in such a setting, that independent invention is suggested. So we say that a tribe may add trait-complexes to its culture by invention.

As a second way of acquiring culture, one may borrow it, or imitate his neighbors. A third method, where two or more tribal cultures may have trait-complexes that appear alike, is by convergence in development, i.e., they may start with very different inventions and finally by mere evolution come to have similar forms. Most anthropologists consider that these three alternatives exhaust the logical possibilities inherent in the phenomenon, or that we can be certain that one of these must hold for a given case. So to explain the presence of pottery glaze in the New World, one must weigh the facts to see which of these three hypotheses is most consistent. We are now approaching subjects concerning which there is a mass of controversial literature, for anthropologists are by no means agreed as to how such recurrences of important trait-complexes are to be interpreted.

INDEPENDENT INVENTION

This is not the place for a full exposition of the theory of independent invention, for like all of its kind, this concept has a history. It first appears with the work of Tylor and his contemporaries, some of whom were disposed to look upon culture as the result of an evolution from a crude stone age, through a bronze age, into one of iron and steel; or, more precisely, if left to themselves, each tribal group would of necessity progress along these lines, though not with equal facility. Independent invention was thus emphasized, for it was assumed that within the constitutions of the tribesmen themselves were tendencies that would result in the invention of pottery,

bronze, iron, etc., without suggestion from abroad. No one now holds to such a fatalistic view, but many able students do insist that while man is not predestined to invent the same things over and over, he does often rediscover what is known elsewhere.

The one outstanding weakness in this theory of independent invention is that satisfactory data as to the time and conditions surrounding such inventions are rarely available, if at all; for if a tribal group is to be proven guilty of originality, there must be direct historic evidence that one of its number did arrive at the idea independently. In other words, we must catch someone in the act. As a large part of the data for culture is far beyond the reach of history in the personal sense, no such apprehension of the culprit is possible. The best the supporters of this theory can do, is to fall back upon geographical distribution and argue that when trait-complexes are found in widely separated localities, independent origin is the most probable explanation. For example, the blowgun is found in tropical America and again in Malaysia; certain methods of making baskets and their designs are the same for the Indians of California and the Negroes of Africa, etc. It is argued, in all such cases, that there being no evidence of communication between these peoples, it follows that each invented the trait independently.

In conclusion then, since many competent investigators consider such evidence satisfactory, even though circumstantial, we may set this down as one of the ways by which cultures may become similar, or as a process underlying an apparent spread of culture over the earth. We say apparent, for if independently created, then obviously the traits do not diffuse.[1]

[1] See Goldenweiser, *Early Civilization,* p. 301.

DIFFUSION

Yet a few able modern writers deny the foregoing *in toto* by declaring most uncompromisingly that nothing of this kind is ever invented twice. They even go so far as to argue that it could not happen.[2] Obviously, this is one extreme, the opposite to which would be that no tribal group could get a trait without inventing it independently. The absurdity of the latter is not far to seek, for if we turn to current events, we see on every hand examples of diffusion. The moving picture is an instance, for it has been taken over by many cultures, as in Japan where it is now about as deeply rooted in the appropriate complex as any other trait; yet there can be no dispute as to how Japan came by it. Again, when at a formal dinner, a Japanese gentleman appears in a swallow-tailed coat and silk hat, no one asserts that he is garbed after original Japanese styles. So naturally, no modern anthropologist takes the extreme view that all similarities in culture are to be accounted for by the independent invention theory. What is asserted is that it does happen sometimes.

On mere logical grounds then, one might assume that the opposite view would be found equally absurd, but the cases are not quite parallel. The facts are that on every hand, look where we will, we see diffusion to be the order of the day, and so overwhelmed by the very multiplicity of the evidence, many assume it to be universal. And there *is* a strong case for the universality of diffusion; in fact, a trait of culture is about as contagious as the measles. Once a tribal group brings out

[2] The diffusion point of view is best presented by Graebner in *Methode der Ethnologie;* Elliot Smith, *The Migrations of Early Culture;* Rivers in *Essays and Studies presented to William Ridgeway,* pp. 474–492 and in the *Westermarck Anniversary Volume.* For critical estimates of these theories see Boas in *Science,* vol. 34, pp. 804–810 and Lowie in the *Journal of American Folk-Lore,* vol. 25, pp. 24-42.

a new trait, its neighbors seem to get it too, and then their neighbors, and so on, for there are not wanting indications that the contagion is involuntary, or beyond the power of the group to prevent. Anyway, traits do spread outward, as we have shown in a previous chapter, for dropping a new trait into a tribal culture, like a pebble on the smooth surface of a pool, sends outward circle after circle. No doubt the cause is to be sought within man's nervous system, but more of that later. All we need note here is that culture traits do diffuse outward in all directions.

Now, the people who radically insist that diffusion explains all culture parallels, do not entirely overlook the necessity of accounting for the first appearance of the trait. This they concede is by original invention; but, to be consistent, they contend that what so happened once can never happen again. At least, the single origin partisans insist that the probability of such independent repetition is so small, that the burden of proof rests upon those who dissent. This does not seem fair or open-minded, because it is one thing to admit the universality of diffusion and quite another to claim this as proof that each trait had a single origin. The mere existence of a mechanism for diffusion does not preclude the duplication of what is to be diffused. Diffusion does not begin until the trait is functioning in the culture of the group responsible for its first appearance.

There is, however, some justification for the belief that two similar traits cannot be arrived at independently. The strength of this argument lies in the nature of the trait-complex. As we have noted, the complex, as traced from one tribal culture to another, is not identical; sometimes it lacks a feature and again adds a novelty, but still in the majority of trait elements it is coincident. So if we find in different parts of the world the same complex coincident at many points, one must see the

great improbability that such identical developments came repeatedly from independent inventions.

An oft-cited instance is the "bull-roarer" complex. In many parts of both hemispheres we find a lanceolate-shaped piece of wood suspended from a whip lash, attached to a short wooden handle. When this is waved about in a certain way, a deep muffled roar is heard. Strange to say, this implement is usually regarded as of high ceremonial significance in the affairs of *men;* women must not see it, or if they look at it, must be put to death. A "bull-roarer" complex with these elements is found in such widely disconnected areas as Australia, Melanesia, Central Africa, and in Brazil. So though it may be conceded that so simple an object as a bull-roarer might well enough be invented anew in each continental area without doing violence to the laws of accident, it is otherwise with the adhering traits of ceremonies for men and taboos against women. The anti-independents assert that even given the bull-roarer, the complexes evolved in different cultures and different environments would certainly differ. Their position is strengthened by the finding of objects resembling bull-roarers in Upper Palaeolithic deposits, a time interval sufficient for its spread over the world. However, since the bull-roarer does occur elsewhere without the taboos against women and we likewise find a wider distribution of women taboos against other ceremonial objects, the issue is not to be settled in this *a priori* fashion. Those who believe in convergence have something to say here.

Yet the strength of the argument from such cases as the foregoing by no means proves that independent origins do not occur. It so happens that meteoric iron was used by the Eskimo of Greenland in early times, and also by certain mound builders in Ohio. In each locality it was used for cutting tools. But if we apply the same method as used with the bull-roarer complex,

we discover that the Eskimo, who made a knife by setting pieces of flint in the edge of a bone, substituted flakes of iron in the same way; whereas in Ohio, where chisels were made by hafting beaver teeth in antler handles, the iron was used to make imitation teeth, though a full bladed knife was found also. It may be objected that this is not a fair case, since meteoric iron is so rare; but the point is that in each case an invention was made by improving existing tools. Nor is the case essentially different from what must have happened with copper and gold. The first man to find a copper nugget did not wait to see if there was a large supply before putting his new idea to work, and so it must have been with gold. Yet, as the use of copper and gold is very widely distributed, it is difficult to disprove the possibility of diffusion from a single world center; but on the other hand, it is different with meteoric iron. Any fair-minded person will accept this as proof that the use of iron in a natural state was discovered in at least three places independently. It follows then that the use of such natural resources as meteoric iron, copper, gold, pearls, and iron pyrites is to be expected, if readily accessible, as independent developments. In other words, even the unfair challenge of the diffusionists to come forward with a single case can be successfully met.

CONVERGENCE

Since in all matters of invention one step leads to another, we may suspect that trait-complexes evolve from simple beginnings. So it is conceived that in the course of time two or more quite different traits, originating in widely separated cultures, may come to be similar. Convergence and convergent evolution are terms used to designate this method of explaining similarities in culture. Such a theory is, in a way, a challenge to the diffusionists, for it says in effect that a trait may have

a distribution due to events not dependent upon diffusion. Even if it were proven that inventions could not be repeated independently, that would not automatically set up diffusion as necessary to distribution. To revert to a former illustration, while the principle of pottery glaze seems to have been invented independently in the New World, it evolved differently from glaze in the Old World, i.e., it is used in the former for the laying on of design only. Yet, it is conceivable that in course of time, had not Europeans come on the scene, New World potters would have developed surface glazing; and so assuming that the history of Old World glaze shows a quite different origin, it might have come about that by

FIG. 5.—Copper Ax-heads from Egypt and Peru. Nordenskiöld.

convergence pottery glaze was the same in the two hemispheres. Fortunately, less hypothetical cases are available. Thus, curious T-shaped copper axes are found in Egypt and Peru (Fig. 5); the similarity between them is startling, though upon close examination they seem to have some minute differences in style. Some years ago, the distinguished Flinders Petrie called attention to the above parallel, but as the respective Old and New World distributions for these axes were widely separated by great expanses of ocean and land, he regarded them as splendid examples of independent invention. This author also shows how the Egyptians developed this form from a simple copper ax, all the chronological steps being observable in archaeological

specimens. Recently special students of New World culture have called attention to a similar stone ax in South America, whose distribution and culture setting marks it as by far the older. We may conclude then that the copper form, restricted to a small area, is copied from stone axes very widely distributed.[3] So then, we have a case of convergence, in which two quite different axes, of radically different materials and in widely separated parts of the world, were the starting points from which evolved two similar forms.

Perhaps the reader may question the wisdom of giving so much space to what appear as hypotheses, but if he reads the arguments of Elliot Smith, Rivers, Graebner, and others as to early contacts between the New World and the Old, he will meet with such arguments at every turn. Elliot Smith, in particular, is an extreme diffusionist, denying the possibility of independent invention. So wherever he observes a similarity between cultures, no matter if half the circumference of the world intervenes, he declares that diffusion is obvious and the only problem presented is to discover how the trait-complexes involved managed to leap the gap. In the case just cited, this writer would take it as self-evident that the Peruvian and the Egyptian copper axes were invented in one place, and having made up his mind in advance that Egypt is more ancient than Peru, place their origin in Egypt. If exception is taken to the improbability of the Egyptians trading or colonizing in Peru with the crude means of navigation at their command, ingenious hypotheses are offered according to which such long voyages were possible. As when the little boy took exception to the story of Uncle Remus in which Brother Rabbit climbed a tree, the retort was "he was 'bliged to."

So, whatever may be the merits of these contentions,

[3] For detailed facts see Nordenskiöld, *The Copper and Bronze Ages in South America.*

the facts of ancient history and prehistory are being interpreted by the foregoing theories; as for instance, when it is claimed that all culture traits were invented in Egypt and diffused thence to all parts of the world. If such a momentous conclusion is accepted, the interpretation of historical data and the immediate objective of research on the part of historians will be revolutionized. It is therefore of the greatest importance that these theories be clearly understood, and the distinction between accepting them all as possible types of culture origin, and that of regarding them as mutually exclusive, be recognized.

In conclusion we should note once more that the point of view in this work is empirical and that the data with which we deal are the realities we call traits and their geographical distributions, all objective and verifiable. The scientific problems in culture arise from the observed relations between the facts that make up these data. If solved at all, these problems must be approached inductively, though, as we have seen, sooner or later, universal principles of relation may be established. So in a scientific inquiry into the nature and behavior of culture, the theories of convergence, diffusion, and independent invention can do no more than state the different ways by which cultures may have come to be similar. Each specific case must be treated as a problem to be approached by scientific methods.

BIBLIOGRAPHY

BOAS, FRANZ. Review of F. Graebner's Methode der Ethnologie (*Science,* N. S. vol. 34, pp. 804–810, December, 1911).

GOLDENWEISER, ALEXANDER A. *Early Civilization.* An Introduction to Anthropology. New York, 1922.

GRAEBNER, F. *Methode der Ethnologie.* Mit einem Vorwort des Herausgebers. Kulturgeschichtliche Bibliothek, herausgegeben von W. Foy. Serie I., *Ethnologische Bibliothek,* vol. 1. Heidelberg, 1911.

Lowie, Robert H. *On the Principle of Convergence in Ethnology* (*Journal of American Folk-Lore,* vol. 25, pp. 24–42, 1912).

Nordenskiöld, Erland. *The Copper and Bronze Ages in South America* (*Comparative Ethnographical Studies,* 4). Göteborg, 1921.

Rivers, W. H. R. *The Disappearance of Useful Arts* (Westermarck Anniversary Volume, 1912).

The Contract of Peoples. Essays and Studies presented to William Ridgeway. Edited by E. C. Quiggin, pp. 474–492. Cambridge, 1913.

Smith, G. Elliot. *The Migrations of Early Culture.* A Study of the Significance of the Geographical Distribution of the Practice of Mummification as Evidence of Migrations of Peoples and the Spread of Certain Customs and Beliefs. Manchester, 1915.

CHAPTER VII

THE SPREAD OF CULTURE

THE facts of distribution are the foundations upon which any understanding of culture must rest, for though, as we have seen, these facts do not in any way account for the origin of culture elements, they do reveal culture processes. Also, it has become clear to us that the anthropologist is in the main a seeker of distribution data, both in space and in time. So far, in this section of the book we have dealt with abstract concepts, instead of presenting in descriptive fashion, the content of typical cultures and delineating their constituent trait-complexes. Unfortunately, the former method of treatment presupposes considerable familiarity with the subject, so it seems best to pause at this point long enough to review the histories of a few typical trait-complexes. Then, with these freshly in mind, we can proceed to a closer view of culture processes. Since common usage commits us to the distinction of primitive and civilized, or lower and higher cultures, it seems best to choose examples from each, even though, as we now suspect, the processes underlying them are the same. So we choose the domestication of the horse, which trait-complex spread over the Old World and finally into the New; and the cultivation of maize, which was carried from the New World to the Old, or from a primitive to a higher culture.

HORSE CULTURE

There are two animals whose history is most intimately interwoven with that of man: viz., the dog and the horse. Of these, the dog takes precedence, for the facts warrant the conclusion that the copartnership of man and dog began in the heart of the Asiatic continent and was carried to the very ends of the earth by the expansion of the human race. How we thrill with inspiration when we contemplate the spectacle of man and his dog appearing in the dawn of culture and in our imagination follow them as through the ages they wend their way amidst the gloom, ignorance, brutality, and mortal dangers that enveloped the paths of primitive progress,—a crooked, halting, and uncertain trail that comes out at last under the full glare of modern civilization. And in all this the dog has played no mean part. Here surely we find sufficient reason for the deep attachment that still holds between us and the dog, bonds which even the most elegantly conceived luxuries of city life cannot sever. The full story of that association will, when written, fall little short of a history of culture; but, unfortunately for us, it still awaits the birth of a genius for culture history, so we must turn to other more instructive examples, though less inspiring they promise to be.

The taming of the horse also has a respectable antiquity, but its wide distribution over the earth is largely a matter of late European expansion. It is, in fact, a very important element in the culture we have designated as Euro-American and its full history will have about the same relation to the study of our particular culture as will that of the dog to culture in general. Even so, we are by no means sure of the facts as to the first steps in horse culture. That the early cave men in what is now France were familiar with the horse is clear, for they have left us some fine etchings and carvings, showing

the flowing mane and tail we all know so well; but with it all there have come down to us no hints that these early ancestors of ours ever hit upon the idea of taming the horse. To them he seems to have been merely "big game."

As stated in an early chapter, the association between horse and man seems to have developed in the steppes of Asia. Upon most maps of Asia will be found a region just east of the Caspian Sea labeled the Kirghiz Steppes. If the map also delineates the general topography, it will show a great stretch of plain which is in the main grass land, varying in fertility from arid spots in Turkestan on the south, to rich open prairie-like lands in southwestern Siberia. Somewhere in this great area, at some remote period, primitive horse culture arose. Just who were the peoples responsible for this development, we do not know, but at the dawn of ancient history, some six thousand or more years ago, this whole area was the home of nomadic peoples from whose midst came hordes of invaders of which the Huns were the last great example. That these Mongol Huns were the first inhabitants of the Asiatic steppes is open to question, for certain inquiring archaeologists have brought to light the graves of a long-headed man over whose tumuli the round-headed Mongol still roams. Moreover, these long-headed ancients remind one of the cave man of western Europe and suggest that the Mongols were late comers to the steppes from the plateaus of Central Asia, the obvious home of round-headed peoples. Though, as we have said before, there is no reason to believe that the western cave man domesticated the horse, it may have been otherwise in the steppes. But whoever is to be credited with the origination of horse culture, we can at least be sure that it appears on the historic horizon with the nomadic hordes pushing out from the Asiatic steppes. Because of our historical bias we usually think of

these doughty horsemen as pressing upon the back door of Europe only, but that is too narrow a view; the facts are that they were expanding and at one time and another assailed every barrier to their pristine home. Thus, it was the wild followers of this horse culture who gave the Chinese so much trouble that they finally conceived and executed the Great Wall. Again, from the same quarter came the troubles of the ancient empires of Chaldea and Babylon; at least, the historians say that the wilder Kassites, who began to overrun Babylon about two thousand years before our era, introduced their horse culture and from that time on it can be traced into Egypt, by the time of Rameses II, finally into Greece, and thence to the modern nations. But these historic events are but a few mileposts, as it were, marking the diffusion of horse culture. What really happened was that it spread outward from the heart of the Asiatic steppes into China, Tibet, Mesopotamia, North Africa, and, ultimately, to the whole of Europe. In nearly every case it was consciously adopted as a military expedient, for otherwise there was no way by which one could meet the wild plundering savages of the steppes on anything like an equal footing.

We must not permit this grand and inspiring picture of culture expansion to obscure an important point. The horse was a different thing to the wild nomad, on the one hand, and the Egyptian on the other. To the Egyptian he was a mere fighting machine and so but a military incident in Egyptian life, but to the nomad, the horse was as much a part of individual life as his master's boots. From what glimpses we have of the ancient nomad life it seems that everybody rode at all times, in fact lived on horseback. Hence, for the nomad to fight as cavalry was the natural or only way, for the truth of the matter is that his whole life was adjusted to the horse rather than to fighting. When he moved about he rode; when he indulged in sport, he also rode; and

when he met with dangers, the chances are that he was mounted. This unsettled gypsy-like life of the steppes still survives—the same old horse culture of prehistoric times. Perhaps its best known modern survival is in the Khalkas of the Gobi. Nowhere else in the Old World except among the wilder tribes of the deserts of Africa and Asia Minor did horse culture reach the same intensity. The Egyptians, the Greeks, and the Romans were too sedentary to give way to the totality of horse culture as did the wild men of the open country. The only time when western Europe came near being overwhelmed by horse culture was in the days of chivalry, but even then the cult of the horse was restricted to a single class.

The nomad of the steppes seems to have been the first to mount, for among the civilized nations, as Babylon, Egypt, Crete, and Greece, we see only chariots in use. The usual assumption is that riding had not yet been invented, but while this form of reasoning is often employed in the interpretation of culture data, one must proceed with caution, for there are other alternatives. Such an interpretation as the above is made upon the assumption that if the horse were taken from a riding people, he would be ridden. But this does not follow. Suppose that a sedentary people like the Babylonians, using the ox and the cart, receive horses from wilder nomads who ride, will they take to riding or will they put the horse to the cart? The chances are that they will do the latter. So we cannot be sure that the nomads were the originators of horse culture or that riding horseback was an afterthought on the part of a chariot driver. Looked at as a mere matter of probability, the chances favor the latter view. In any case true nomadic horse culture grew up in the steppes, though the idea may have come from the great culture centers of the Far East, where the custom of riding elephants and camels was

practiced. Here, however, we are getting beyond the pale of knowledge, for the time-relations of these traits have not been worked out, so that we cannot be sure as to just when the riding trait came into existence. For the present, though, this matters little, as our interest lies with the horseback complex.

So with this very inadequate view of a most unique trait of Old World culture, we must be content for the present. Tantalizing though it is, it will suffice to introduce the history of the horse in the New World. Paleontologists tell us that the horse once roamed over both North and South America, but became extinct long before the time of Columbus and probably before the Indian came. Consequently, the Indian was up to 1492 quite innocent of anything like horse culture. No horses accompanied Columbus upon his first voyage, but subsequently the Spaniards who came to live in the New World brought the horse as a matter of course, for they were still the worthy sons of chivalry. As schoolboys we learned how Cortez awed the Aztec when he rode into their country, like some strange two-headed monster. De Soto also carried a retinue of horses to the Mississippi in 1541 and wherever the Spaniard went in force, there was the horse. A little later came the English to the Atlantic Coast and particularly the aristocratic Virginian with his horse.

Though then, as now, the horse was quite domesticated, he readily reverted to his primitive wildness at the first opportunity. So it is not surprising that already in 1669, scarce a half century after the date of settlement, wild horses had become a pest in Virginia. We do not know when they were in evidence west of the Mississippi, but De Soto had with him enough horses to start wild herds, not to speak of the Spanish expeditions from Mexico into what is now southwestern United States. What we do know is that the spread of the wild horse

preceded later exploration of the great grasslands of the Mississippi Valley. In South America also horses soon became wild and we read that in the year 1853 a Spanish colonial official deliberately turned out a few horses into the grasslands of South America that the country might be stocked with a never-failing supply. Thus it seems that both by design and by accident the first colonists in both North and South America rehabilitated the wild horse in the New World.

We have noted these facts only as a setting to the culture phenomenon that was therewith staged in the Americas, for the native Indian soon ceased to be awed by the domestic horse and himself took over Old World horse culture. Throughout all the great grassland of southern South America and the great stretch of similar lands west of the Mississippi and in southern Canada, there quickly appeared whole tribes of Indians virtually living on horseback. The horse spread so quickly among them that many tribes in both continents were virtually undiscovered by the advancing whites until they were the most thoroughgoing horse Indians. Thus, unfortunately, the valuable history of the diffusion of horse culture over the plains areas of the New World was lost for want of observing recorders. Nevertheless, we have been able to recover some facts and the story is worth sketching here, even though space forbids all but the merest outline.

The great horse Indians of North America were also the buffalo-hunting Indians and this means that they lived in the plains west of the Mississippi. It so happens that we have few records of these Indians until 1700, though La Salle reported horse-using natives south of the Missouri in 1682. This really means that all the Indian tribes below the Missouri were even at that date using horses. A little later (1719) a Frenchman visited some Indian villages, in what is now Oklahoma, where

he says he counted upward of three hundred head of horses. For the upper Missouri and northward we also have some data. In a Sioux Indian picture writing, recording the chief events for the successive years, 1708 and 1709 are given as the dates for the first horses and these came from the Omaha on the south and the Assiniboin on the north. And far up in the plains of Alberta, Canada, a French official reported in 1751 that he met Indians with horses and saddles. Three years later Anthony Hendry, employed by the Hudson Bay Company, set out from their fort on Hudson Bay and journeyed ~~down~~ the Saskatchewan River to the Rocky Mountains, then an unknown country. To his surprise, he soon found himself among Indians where everyone, men, women, and children, had horses to ride.

In general, then, it appears that the Indians of the southern plains had horses before 1680. Just how long before we do not know; but as more than a hundred years had elapsed since De Soto came to the Mississsippi and the Spaniards settled in New Mexico, it is a fair guess that horse culture was well established among the Indians of the Plains before 1650. This is a matter of some importance to us here, because it means that all these Indian tribes had a chance to adopt horse culture long before they came into direct contact with Europeans, and at once raises the question as to what the Indian did with the horse. Did he strike out on new lines and devise a highly original horse culture different from that of the Old World, or did he merely repeat the same development?

First of all, we must not forget that the horse did not come to the Indian as a new wild animal, for he appeared with his Spanish riders. Hence, the Indian had no chance to invent something new in culture. Those in immediate contact with the invaders learned to use the horse and in turn passed this knowledge on to their

neighbors, thus relaying horse culture long ahead of exploration and colonization. How manifestly different, therefore, is the origin of horse culture here from what it must have been in the heart of Asia, where man contemplated the wild animal and proceeded step by step to the discovery of horsemanship, for there is every reason to believe that there is where the invention was completely worked out and that all the rest of the world, down to the wildest Indian tribes of our western plains, were but imitators of prehistoric Asiatic horsemen.

As we have stated, anthropologists are accustomed to speak of horse culture as a complex. They comprehend that it is not merely the presence of the horse that constitutes horse culture, but that around his use cluster habits, mechanical appliances, social distinctions, literary ideals, and even religious practices. Since all depend upon and have to do with the functions of horsemanship and are closely interlaced one with the other, they appear as a complex. In order to understand the full significance of the horse among our Indian tribes, we must recognize the nature of this culture complex. Thus, the Indian used saddles though he did on occasion ride bare-back. Women, in particular, used saddles and also stirrups. Instead of a bridle, a lariat was looped over the under jaw and the horse guided by the knee or by pressure of the lariat upon the neck. With the same lariat he made use of the picket as our western horsemen still do. A short-handled quirt dangled from the wrist of the Indian rider and occasionally his saddle was provided with a crupper, also with side and shoulder trappings characteristic of Spanish knights. Occasionally, the head of a war horse was dressed in a soft skin covering much like the helmet of an armored horse. The rider frequently carried a long lance, a short sinew-backed bow and a circular leather shield, or buckler. He had more or less skill with the lasso and could on occasion perform remarkable feats of

horsemanship. On the other hand, the Indian did not use the cart, but rarely did the Spaniard hitch the horse to a vehicle, that degradation being reserved for the ass and the ox.

In South America the natives used the same appliances as in the north.[1] Their favorite weapon, however, was the bolas which was in use before the horse came and was quickly adopted by the Spanish colonist. They also used a small stirrup for the great toe only, but so also did many of the Spanish colonists.

Now all this sounds so much like the horse culture of our own cowboys that we may be prepared to see that about the only Indian element in native horse culture was the redskin himself. If we go to a well-ordered museum and examine the saddles used and made by Indians, we find both those of South and North America made in the same way. Since the horse Indians of the two continents were separated by several thousand miles, we must conclude that both groups of Indians borrowed their saddle pattern from the Spanish. So did they the stirrup, the crupper, the quirt, and the lariat. In short, they copied the whole complex from *a* to *z* and themselves contributed next to nothing of importance. Further, they did it readily and largely of their own initiative. Of all the culture complexes carried to these shores by the European colonist, this one was the most promptly and spontaneously assimilated by the Indian. Had connection with America been broken immediately after 1600 and another long period of isolation set in, horse culture would have flourished in the great grasslands of the New World, nor is there reason to doubt that it would have remained essentially true to the Asiatic pattern.

[1] For a spirited account of the South American horse-complex, see Dobrizhoffer, *An Account of the Abipones;* for the North American Indians, see Catlin, *The North American Indians.*

Incidental note should be taken of one feature of North American Indian horse culture, because it presents a peculiar parallel to what we find in the Old World. Before the coming of the white man the Indians of the open grasslands west of the Mississippi used dogs as beasts of burden. Naturally they did not ride them, nor did climatic conditions make it feasible to use sledges as do the Eskimo and the Indians of the north. Instead

FIG. 6.—Spread of the Horse Complex.

The heavy line indicates the general drift of an Asiatic variant of the complex, through Africa to Spain and thence to the steppes of the New World; the broken line to the west, the path through Europe to England and thence to the colonies of the Atlantic seaboard.

a kind of drag frame was devised upon which a pack was made up and which is known in literature as a *travois*. When Coronado reached the western plains in New Mexico, he met roving Indians using these *travois* for transporting their tents and baggage. So when the Indians first saw the horse and the uses to which the Spaniards put it, they called the horse a dog, a new kind of dog. Many tribes still speak of horses by such names. But the point of special interest to us is that they enlarged

the dog *travois* and put the horse to it. From some of the earliest accounts it appears that this was the first use of the horse, riding being learned later. So, just as we have supposed that the agriculturists of the Old World hooked up the horse to an ox cart and thus invented the chariot, instead of taking to his back, the Indian put him to the dog *travois*. Each first fitted the horse to what was nearest the complex that came with him; later, the more radical method of mounting on his back was adopted.

Here we must conclude this review of the horse complex, this fragment of the world's culture history in which we see how the essential elements of Asiatic horse culture were carried into Spain by the Moors, where the environment was not particularly favorable, but still permitting their assimilation by Spanish knighthood, and so preserved and transported to the New World, where with a leap and a bound they took to the great steppe-like areas of the two continents and at once assumed their original relations to life.

THE MAIZE COMPLEX

The story of the Indian and his horse is quite reversed when we consider the history of maize, or corn. As everyone knows, maize was found in cultivation among the aborigines of our Atlantic seaboard and the Gulf Coast, and was carried to the Old World by the very first explorers, where its use developed and spread with great rapidity. A review of the data for the cultures of these Indian tribes reveals what the reader may now expect, a respectable complex based upon the production of this indigenous New World food, but to get the situation clearly before us we must enumerate the traits making up this complex.

Naturally, the fundamental concept is the propagation of maize which embraces the related processes of pre-

paring the soil, planting the grain, protecting the crop, gathering the ears, and preserving the seed. Each of these is a fixed procedure and must be followed in a definite order. While this is in itself a respectable complex, it is but the nucleus. The food production processes are numerous: maize was eaten green, hulled, and ground, with various forms for each. Mixed dishes of maize with beans, squash, or meat were prepared according to definite recipes. Looking in another direction, we find numerous religious ceremonies and social observances definitely associated with maize. Perhaps we have gone far enough to reveal the general characteristics of the maize complex in the cultures of our North American Indian tribes, but, if not, the reader is referred to the literature of the subject, especially A. C. Parker's book on the *Iroquois Uses of Maize and Other Food Plants* (Albany, 1910).

One striking characteristic of the Indian maize complex is its similarity throughout. It should be noted that our Indians were composed of many small groups independent politically and in many cases distinct as to language and most traits of culture as well. If we pass in review the successive tribal cultures from the Gulf to the St. Lawrence we shall encounter considerable diversity of traits, but throughout we shall find the maize complex almost entire, particularly in all but its ceremonial elements. So far as our data go, the same varieties of corn, the same methods of planting, fertilizing, and cooking prevailed everywhere in the Mississippi Valley and eastward. It is difficult to account for this uniformity in one culture trait unless we assume that it was distributed from one place in its complete form. In that case each tribe would be relieved of the necessity for devising ways and means of utilizing maize and so of making important original contributions.

After having made an inventory of Indian maize

culture it may be interesting to examine our own maize culture to see how completely our ancestors took over this aboriginal complex and to what extent it still survives. Our farmers formerly planted, and often yet plant, maize in hills; this was the universal Indian mode, four to five grains being dropped at one place at regular intervals of about three feet, quite like a cornfield of today. In cultivation, the Indian hoed the earth up around the growing stalk, which is still the principle of the mechanical cultivator. For husking, our farmers use a husking pin, which, while now of iron, was not so very long ago of bone and wood, precisely like those still in use among our surviving eastern Indians. Ears of corn to be dried or preserved for seed often have their pendant husks braided together; this is typically Indian. The corn crib was used by the Indians and elevated on posts to keep the contents dry and to protect it from rodents. The type of crib which is larger at the top than at the bottom was also in use by the southern Indians.

The Indian planted beans and squashes among the corn. This has always been a favorite custom of our farmers. He also understood the art of testing his seed and of preparatory germination in warm water. Where fish were available they were used for fertilization, the rule being one fish to a hill.

The methods of cooking corn are, not only still about the same among us, but we also retain many of the Indian names for such dishes, as hominy and succotash. The famous roasting-ear in all its forms was known to the Indian. Then we must not forget the favorite mush, which is stirred with a wooden ladle strikingly like those of the Algonkin tribes. Some years ago our country people still made "lye hominy" with wood ashes, just as described by some early observers of the Indian. Corn-husk mats may still be seen in some country homes, braided after the Indian fashion.

The one important innovation of the white man was the substitution of the mill for the mortar. Later, of course, came various kinds of machinery for the cultivation and gathering of corn, but all such machines are but mechanical appliances to perform more expeditiously the same old processes. It is clear that in pioneer days the white farmer took over the whole maize culture complex entire, except its ceremonial and social elements. Even here we find some curious similarities. The husking-bee, which was one of the great social events of our fathers' times, is strikingly paralleled by an old Indian custom. No doubt if we knew more of the homely history of our forefathers we should find some surprising intrusions of ceremonial and superstitious practices to propitiate the growth of their crop.

If we reduce these data to a generalization, it appears that the white colonist took over the entire material complex of maize culture. He did not simply borrow the maize seed and then in conformity with his already established agricultural methods, or on original lines, develop a maize culture of his own. In fact, he has no basis for any claims to originality except in the development of mechanical appliances and the somewhat recent rationalization of agriculture by scientific investigation.

In this connection the maize culture of the Old World is particularly suggestive. At the discovery of America, samples of maize were carried home, seed was planted, and in a surprisingly short time its cultivation spread even so far as China; but the maize complex of the Old World has scarcely anything in common with that of the Indian and the American farmer. The reason is plain—it was the isolated plant that came into European culture, necessitating original experimentations with the new seed, or, at least, the adaptation of its culture to the methods or "patterns" for the raising of other plants. The first American farmers, on the other hand, found

themselves projected into the midst of a new culture, where it was much easier to adapt trait-complexes than to invent them.

It is more than likely that we are here illustrating two characteristic modes of culture diffusion: in one case a new object or an isolated idea is carried far afield and dropped into the midst of a strange culture group, and in the other the group itself is dropped into the midst of a strange culture, or merely brought into contact with it. In the latter, whole complexes will be taken bodily; in the former, a new trait will be originally developed or simply adapted to some already existing pattern.

The taking over of the maize-complex by the whites has its parallels. One striking example is the tobacco-complex, where again the colonists took over all the essential parts of the trait-complex. The manufacture of maple sugar is another. Also, in the wide distribution of aboriginal Indian traits we have presumptive evidence of intertribal borrowing, and the fact that distinct complexes like pottery making, coil basketry, acorn meal, soft buckskin tan, etc., are often found among many adjacent tribes without essential variations, indicates that one tribe after another took over these complexes entire in just the same way as our typical example of maize culture was taken over by the American colonists.

Returning to our discussion of maize culture, another suggestive fact is that the geographical distribution of the present type of maize culture is the same as among the Indians in prehistoric times. Moreover, a similar coincidence in the persistent localization of a complex was noted in our sketch of horse culture, where we saw that the Indian took over the Spanish complex which came from the Moors of North Africa and which in turn was slightly different from the horse culture of the French and the English, brought to the Atlantic Coast by the early settlers. But the white settlers crossing the

Mississippi substituted the old Spanish type of horse culture for the eastern colonial type, and so it has come about that west of the Mississippi we have one kind of horse culture and in the eastern states another. Thus, west of the Mississippi, we have almost everywhere the cowboy saddle and expect to see with it the lasso, and the cinch instead of a girth. Also, we expect to see the riders wearing chaps, heavy spurs, and picturesque sombreros. The reason for this is now clear, for these objects are survivals of Spanish days and represent the horse culture of southern Europe, whereas the eastern states were settled by Englishmen who brought the small patch-like saddle and the slender equipment we expect to find associated therewith. So it may be said that the Spanish horse culture, transplanted to our western country, first flourished among the Indians, but still held on after the Indians were displaced by colonists from the Atlantic States. It should be noted also that these settlers from the Atlantic Coast abandoned a type of horse culture to which they had been long habituated. Likewise, Indian corn which we are sure originated in Mexico or Central America, spread among the prehistoric tribes to the whole of what is now eastern United States, and when the English later displaced the red man, corn, or maize, culture held its own. Indeed, it bids fair to flourish indefinitely, regardless of our fate.

In general, then, students of the world's culture history have from time to time noted the tendency of specific culture traits to persist in one geographical locality regardless of racial and even linguistical change in the population. The preceding data suggest that the underlying condition of this is the observed tendency to take over entire culture-complexes instead of developing them from a single element. In other words, when a culture-complex once develops as an adjustment to a locality and works fairly well, it tends to persist in that locality and

may prevail over complete changes in blood and language. It need not be the best adjustment of its kind, but it offers the practical advantage of immediate and certain return and, once adopted, inhibits other adjustments, however superior they may be.[2]

BIBLIOGRAPHY

CATLIN, GEORGE. *Illustrations of the Manners, Customs, and Condition of the North American Indians.* 2 vols. London, 1848.

DOBRIZHOFFER, MARTIN. *An Account of the Abipones, an Equestrian People of Paraguay.* 3 vols. London, 1822.

WILL, GEORGE F. and HYDE, GEORGE E. *Corn among the Indians of the Upper Missouri* (Little Histories of North American Indians, No. 5, St. Louis, 1917).

WILSON, GILBERT L. *Agriculture of the Hidatsa Indians, an Indian Interpretation* (University of Minnesota, Minneapolis, 1917).

[2] The greater part of this section originally appeared in an article in *The American Journal of Sociology,* vol. 21, p. 656 et seq. See also Will and Hyde, *Corn among the Indians of the Upper Missouri,* and Wilson, *Agriculture of the Hidatsa Indians.*

CHAPTER VIII

NATURAL DIFFUSION

So far in this discussion of culture and its processes, we have not gone outside of the phenomenon itself; all the illuminating insights we have attained were from comparing the distributions of trait-complexes, in time as well as space. In other words, we have dealt with the data of culture alone without regard to environmental and other external relations. We must now inquire into the objective limitations to the spread of culture. With the concrete facts for such spreading of trait-complexes over the world before us, there arise many specific questions as to why these movements of culture have followed certain routes instead of others. The objective approach to such problems lies in the correlations between traits of culture on the one hand and the facts of geography on the other. This will be no light task, for the fauna, flora, topography, climate, and all that go to make up the extra-human world, are even more complex than culture itself.

Taking the facts of diffusion as they stand, they reveal two types of phenomena, a kind of diffusion that is undirected by the groups of men involved, naïve, unconscious, or natural, as we say; the other projected deliberately and according to a well-developed plan. These concepts, however, define the extremes between which any given case of diffusion will fall, for it is doubtful if any event in diffusion is wholly rationalistic. Natural diffusion is seen at its best among the primitive, and directed diffusion among the enlightened. Natural diffusion we have

commented upon in detail under the appropriate headings, but so far we have not considered the factors that facilitate such a spread of culture. Among these are the geographical settings and random migration, particularly infiltration. On the other hand, purposeful diffusion usually takes either of the following forms: colonization, proselytism, or conquest. It is to the data of natural diffusion that we shall direct our attention in this chapter.

PHYSICAL BARRIERS AND NATURAL BOUNDARIES

When we first traced out the geographical distribution of a trait-complex, we found it tending to be circular, or radiating from a center. In some observed cases, this form is closely approximated, as in Figs. 2 and 3. Yet there are instances where the bounds to distribution are so distorted as to obscure this relation. Thus, if we consider the range of the Eskimo *kayak,* we find it in a long narrow area extending from Greenland on the east, across the Arctic Archipelago and Northern Canada, through Alaska into Siberia. One might say that this approaches a linear distribution, but in reality it is banded, or zoned, the width at one point exceeding twelve hundred miles. But many other Eskimo traits are distributed throughout this same zone, and what is more, they tend to center in the vicinity of Coronation Gulf, just west of Hudson Bay.[1] The existence of such a center indicates that we are dealing with a true culture area, whose most distinctive trait-complexes tend to radiate from a common center. Turning to a map of Arctic America, and noting the position of Coronation Gulf, it is apparent that a culture primarily based upon sea mammals must diffuse east and west, rather than north and south. In other words, the topography will distort the otherwise circular bounds to trait distribution,

[1] See Steensby, in *Meddelelser om Grønland,* vol. 53.

In the eastern hemisphere are other examples of such distortion of culture boundaries. Thus Minoan culture seems to have centered in the Island of Crete, but archaeological researches show that it spread eastward as far as Asia Minor and westward to Spain, and that it did not, so far as we know, reach far inland. Theirs was a culture of islands and shore lines, the inland being in this case a barrier. Also the facts of history show Crete to have been the world's first great sea power. Naturally, then, the Minoan culture area, or the sphere of its influ-

FIG. 7.—Range of Eskimo Culture.

The center of dispersal is indicated by the circle.

ence, must follow the shore line, and so it appears that Minoan culture, the mother of Occidental cultures, from which even the Euro-American traces descent, had a distribution of the same distorted type as the primitive Eskimo, and, what is more, for similar reasons.

One more instance may be cited to define the situation clearly. While the bow and arrow were found in most parts of the earth, a special type of bow, known as the Tartar, or sinew-backed bow, has a more restricted range, and, since the principles involved in the construction of

this bow are so distinctive as to differentiate it sharply from other bows, we may deal with it as with any other trait-complex. Its place of origin is obscure but, from the form of its distribution, northern central Asia is the best guess. One would expect it to arise among an advanced hunting people, for they are the only ones thoroughly experienced in handling sinew; but it is difficult to see how the problem of reinforcing a bow would arise unless a shortage of good bow wood was encountered. Such would naturally happen when tribal groups took to the steppes and the tundra. On the latter all kinds of wood might fail, in which case bone and horn would be substituted, as we find it among the Eskimo and certain Indian tribes. But a powerful wood bow must be of great length, an awkward contrivance to use from the saddle or chariot, suggesting that the invention would find its most typical setting among the nomadic horseman. As a matter of fact, the data for its distribution do correlate rather well with the fortunes of these nomads. Briefly recapitulating the available facts concerning this bow, we find it among the tribes of north and central Asia.[2] In early times it was known to the Turkish peoples and seems to have reached westward beyond the Urals. It was known in China, from whence it reached India and Malaysia. Returning to the Near East, we find it among the Persians, who attributed it to the Scythians, wilder hunting peoples in southern Russia. The Greeks had it in the days of Homer, and so probably brought it with them from the northeast. It appears in Egypt about the sixteenth century B.C. From Greece it passed to Italy and survived until steel was available, when a bow of this material, but of the same pattern, was substituted. Turning back to the Near East once more, we find it used by the Arabian horsemen and, with the expansion

[2] See Balfour in the *Journal of the Anthropological Institute of Great Britain and Ireland,* vol. 19, pp. 220–250.

of Islam, carried into Africa and eventually to Spain. Now shifting to the New World, we find it spreading

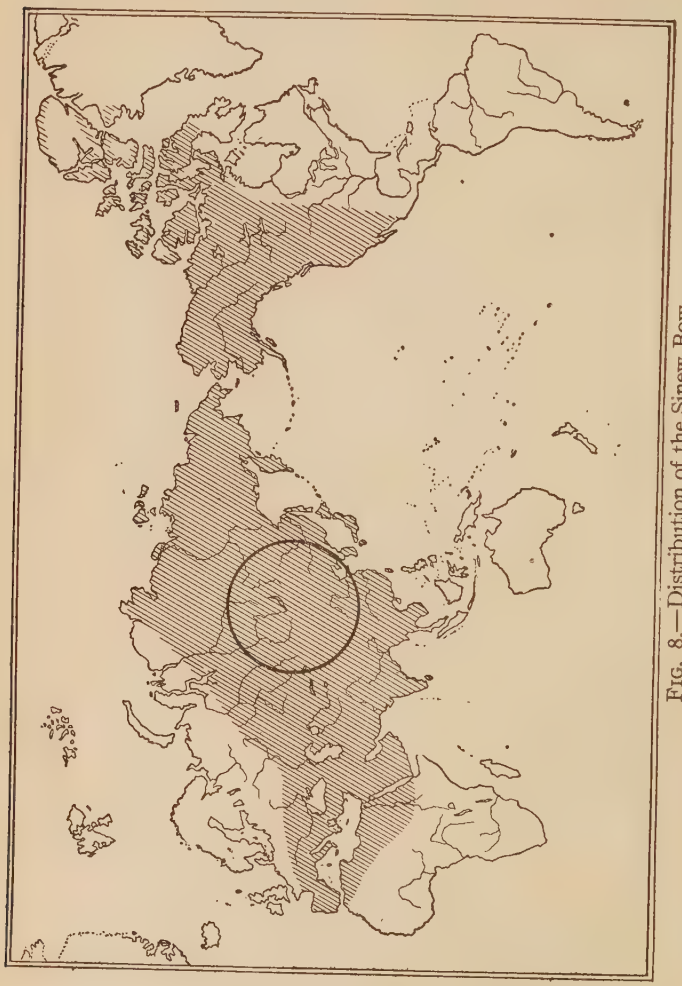


FIG. 8.—Distribution of the Sinew Bow.
The locus of the Tartar bow, the most complicated form, is shown by the circle; this also seems to be the approximate center of dispersal.

from Siberia into Alaska, eastward among the Eskimo and southward along the Rocky Mountain highlands to California and northern Mexico.

So the diffusion area of this bow trait is an intercontinental affair and in general outlines resembles two great triangles whose apexes meet at Bering Straits. Nevertheless, this diffusion area has a center, and in America there still survive on the outermost margins of the area, the more primitive forms of this bow. We are, then, justified in interpreting this area as merely a distorted form of the concentric circular type.

Now, if we generalize, it appears that the gross irregularities in the outlines of these diffusion areas are due to topographical conditions. This is obvious as to the distinctions between land and water, a relation too elementary to dwell upon, but it is well to begin with this basic incontrovertible fact. Yet, while it must follow that culture stops at the shore line, the problem still remains as to what determines the inland limit. Why, for example, did Eskimo culture cling to the Arctic Coast; Minoan to the shores of the Mediterranean, and the Tartar bow to the contiguous corner of two hemispheres?

While such questions are not easily answered and are seldom answered each in the same way, there are certain principles in evidence which approach universality. It is not enough to say that Eskimo culture skirts the coast, because it is in part an inland culture; the facts are that as a rule the Eskimo live at the shore in winter and inland in summer, for in winter they depend upon seals, caught at their breathing holes in the ice, but in summer they hunt inland for caribou. Further, an analysis of Eskimo culture makes it certain that it developed around the trait-complexes of winter sealing and summer caribou hunting.[3] Again, Minoan culture had an insular center, took on maritime characteristics, and so seems to have diffused to other islands and the adjacent shores. For one thing, travel in ships conditioned the diffusion of their trait-complexes, but we cannot analyze the Minoan

[3] See Steensby in *Meddelelser om Grønland,* vol. 53.

setting as successfully as we have that for the Eskimo, the race having been extinct for centuries and the culture known to us only by such fragments as the spade of the archaeologist brings to light.[4] Those who scoff at anthropology as the science of the contemptible savage, should note the difference between what we know of Crete on the one hand and of the Eskimo on the other; and further, take note of how full data on the crude culture of the one enables us to interpret the less complete facts of the other. So we infer that the Minoans developed trait-complexes around some peculiarities of their insular home, as did the Eskimo in their land of ice and snow.

This brings us to another aspect of the problem. The Eskimo were hunters and, so, dependent upon the fauna. Since there is an obvious necessary relation here between hunter and what is hunted, we may expect the natural diffusion of hunting complexes to be distorted or modified by the distribution of game animals. The fact is that we do find a close correlation between the bounds of trait-complex distribution and the range of game animals, the evidence for which has been set forth in another work.[5] This relation is seen at its best in the Americas, where were preserved to us the purest examples of hunting cultures, such as one time held sway throughout central and northern Europe and a large part of Asia. In each instance the emphasis was placed upon one animal and a trait-complex developed around it. Thus the Eskimo evolved a complex around the seal and a very complicated one it was, so intricately woven about its life history that it could not function with any other mammal. Naturally, then, the diffusion of this complex would be coincident with the habitat of the seal. A familiar example is the Indian culture of our western plains, which developed

[4] For a brief sketch of Minoan culture see Baikle in the *National Geographic Magazine,* vol. 23, pp. 1–25. And for further information see Evans, in *The Palace of Minos.*

[5] See *The American Indian.*

around the bison and presents a diffusion area coincident with this fauna. In such cases, then, it is not the topography that directly limits the bounds to diffusion, but the specific food fauna. Under the head of *adhesion,* it was shown how traits seemed to drag along others in the complex, so we need not be surprised to find that art, religious, political, and even war complexes followed those directly based upon the fauna. The old military maxim that "an army marches on its belly" has its counterpart here, where we see that the entire culture complex follows the chase.

When agriculture once rose, to the displacement of hunting, some degree of independence was achieved with respect to the fauna, but new limits were encountered in the environment. For example, the maize of the American Indian, though artificially adapted to dry as well as to moderately humid areas, could not be raised where early frosts were the rule; hence, the spread of this complex, as we have sketched it, was determined by temperature as well as by rainfall. Thus, there are obvious limits to the spread of the maize complex, and since the principle of adhesion is universal, we may expect many other traits to observe the same limits and so find that in this case culture will follow the hoe. In short, the multiplication of examples might go on until the whole world was encompassed. It is apparent, therefore, that among hunters and the more primitive agriculturists, a most intimate relation exists between the range of a culture and its food complex. This should not be understood as meaning that the food habits of a people alone determine the content of their culture, but that the diffusion of its complexes is conditioned thereby.

Again, to avoid placing undue emphasis upon the food habits underlying culture, we may turn to transportation complexes, for, as we have suggested, an insular culture is likely to be built up around navigation and so diffuse

along shore lines or through island chains. This is especially in evidence in the Mediterranean where we see Minoan, Greek, and Roman cultures, successively spreading around the shores of that land-locked sea. Nor is it clear that the specific food complexes of these cultures were the leading determinants, since some of them—agriculture and grazing—might easily have spread inland; yet the particular forms taken by these complexes would determine what sections of the shore line were inundated by these cultures. In other words, we come back once more to topography. So it appears that topography, fauna, and flora, not to mention other interrelated phenomena, form an environment-complex, and as such go far to determine the areas of culture diffusion. It is even justifiable to state that they alone decide how far a given trait-complex may go. So it is not strange that political boundaries, arbitrarily set up, present no barriers to the diffusion of culture, unless they also happen to coincide with the basic geographical boundaries; and though we once said that culture mocks at the bounds set up by politics, we may now add that it approaches geographical boundaries with its hat in its hand. Some traits, it is true, may leap even these formidable obstacles, but only in case they are quite immaterial, highly generalized, or weak in adhesion; and, even so, they wander afield as detached traits and not as complexes. Hence, we may conclude that the forms of distribution observed for culture trait-complexes are what they are because of the immediate environment. However, the principle just stated is not equivalent to the popular conception of physical barriers, according to which it is taken as a matter of course that shore lines, rivers, desert wastes, and mountains are natural barriers to the spread of culture; for what is usually meant is that these are barriers to militarism and political complexes. Moreover, their defensive values must not be overestimated. Thus,

the channel is one thing to France and Belgium, but a far different matter to England. To the latter it is the front line of easy defense, blocking the only direct road from the enemy's country; to the former, it but gives partial security to the rear. Switzerland, again, has found in her mountains the most effective of fortifications. The ancient Aztec of Mexico, who founded a City-State, like Rome and Athens, built for the most part upon rafts and made-lands in a lagoon. So it is everywhere, that in time of need, strong militant cultures have been disposed to seize upon natural barriers as lines of defense. There can be no denial, then, that the fortunes of war, other things being equal, will favor the antagonist with the most effective military barriers. That even the most scientific of all wars, the World War of our time, was unable to ignore the mere topography of the battle lines, is convincingly shown by an able student of geography.[6] Yet, our concern now is with the part these military obstructions play in deflecting the lines of culture diffusion as a natural process.

From the conclusions so far reached in this investigation, it follows that these physical barriers are far less efficacious in blocking the onset of culture than in checking the military invader. For one thing, they did not stop man himself, since he encompassed the earth even under primitive conditions, and so if infiltration of population was possible, natural diffusion would be also. If, again, such barriers were equally able to stop the spread of culture traits, one could, from a relief map, lay out the diffusion areas of the world and so become a prophet in culture. We have seen that to a certain extent this can be done, but that it is true chiefly in so far as faunal and floral conditions are affected by these

[6] See Johnson, *Battlefields of the World War*, and for an extended discussion of boundaries read Holdich, *Political Frontiers and Boundary Making*, also certain sections of Semple's *Influences of Geographic Environment*.

barriers. Incidentally, note should be taken of the one salient feature that stands out here above all others—the tendency of the trait-complexes that develop around economic aspects of the environment to spread, so long as the environment remains the same. Students of human geography have often commented on a like tendency in migration, but as a rule they never analyzed the situation to the point of discrimination between migration and the natural diffusion of culture. The usual method has been to speak of all culture distributions as evidences of migration. This is again a heritage of political and military history, whose devotees have long held up to us the spectacular migrations of the Asiatic nomad—the Huns, Mongols, etc.,—as the universal type of diffusion. This and the parts played by the conqueror have been so exclusively emphasized that we take migrations for granted when we meet with culture uniformity where there is now political disparity. But from the non-Europeanized world it is easy to select example after example in which it is apparent that neither conquest nor migration will account for the observed distribution. In America, for instance, we have trait-distribution areas in which there are many languages, and distinctive somatic types. If either migration or conquest had brought about this result, most assuredly there would have been an approach to uniformity in these respects. That migrations have occurred nevertheless is evident from the fact that representatives of the same family of languages are found in different diffusion areas with cultures of equally distinct types. A little thought will show that this condition of affairs cannot be accounted for except by diffusion pure and simple.

For one thing, then, we see that the basis for the diffusion of trait-complexes is environmental and, to a large degree, also economic, since, whether primitive or civilized, man preys upon the organic resources of his habitat.

So the immediate factors in the determination of diffusion boundaries are the fauna and flora. Were these uniformly distributed over the surface of the earth, there would be no such diffusion areas as now exist.

TRAITS THAT DO NOT TRAVEL

While, literally speaking, there is no known trait of culture that will not diffuse, instances can be cited where the trait at the time of observation was confined to one or a very few adjacent tribal groups. One must, however, be a little wary of such cases because for no single culture are the data ideally complete. Yet it is evident that if a trait were widely distributed, it would sometimes be reported, for by the law of accident, it should not always escape observation. From what has gone before, the reader will naturally distinguish between the diffusion that stops when it reaches the boundaries of its culture area and the one that sweeps across a continent. But we are now considering diffusion that reaches but one or two tribes, or is not coincident with the culture area.

So, if there is such a thing as tribal individuality in culture, the increment that constitutes the peculiar and exclusive possession of the tribe is a complex that has not traveled. The most obvious of these is unity of speech, the varying degrees of which we have discussed. There is, however, a subtle flow of detached linguistic elements proceeding more or less continuously, as evidenced by the incorporation of foreign words, occasional phonetic shifts, and structural innovations,[7] but these are quite infinitesimal when we consider the otherwise rigid conservatism in tribal speech. In almost equal measure is there tribal individuality in political systems. It is true that in a culture area there are political conceptions in common, sometimes very basic and fundamental, and

[7] Sapir, *Language.*

yet the particular method of delegating leadership, the detailed machinery set up, will in some respects be peculiar to the tribe. These differences are also more often abrupt than finely intergraded. The significance of this lies in the circumstance, that as one travels across a true culture area, he meets with small successive changes, instead of abrupt differences, all of which we have explained in detail under another head. Such gradation is the result of diffusion and is, therefore, not to be expected in traits peculiar to one or two tribes. This explains how it is that traits like universal suffrage, legislative bodies, judicial methods, etc., are found in intergraded distribution within the Euro-American culture area, whereas the system of presidential electors, party conventions, etc., is peculiar to the United States.

As an example of a specific trait not diffused we may cite the famous Chilkat blanket of the Alaskan Coast. This particular textile, unique in form and decoration, seems not to have been produced except in the tribe from which it takes its name. Again we note that the Pawnee Indians practiced the sacrifice of a bison as a burnt offering. While such offerings are well known in the Old World and figure conspicuously in Biblical culture, they are rare in the New World. The Pawnee, however, proceeded in a highly original manner, and so far as we know, nothing like their ritualistic procedure occurs elsewhere. Many other ceremonial traits manifest among the Pawnee are distributed far and wide in the culture area to which this tribe belongs, yet this one did not diffuse. Also the Oglala Sioux developed a complex of beliefs and practices around the concept of the whirlwind, which drew into it flying insects and human psychological phenomena. Though disconnected fragments of this are found among a few of the adjoining tribes, nothing like this highly individual complex appears elsewhere.

No doubt many other examples of non-diffused trait-complexes could be cited, but these will serve to bring the subject before us. Turning first to the Chilkat blanket we find its uniqueness to consist in the design,[8] for other tribes wove blankets of the same materials and in much the same way. Nor was the design wholly original with the weavers, but the uniqueness consisted in its inclusion of a type of design generally used for painting on large wooden screens and upon house fronts. So far as we can see, there was nothing exceptionally difficult in its fabrication. In short, no reason appears why it should not have diffused. On the other hand, we have some historical data suggesting that this blanket is not two centuries old. Its newness might in part account for its failure to diffuse. Yet, there is another aspect of the case in that this work of art is found to be at the very highest level of the art developed in the culture area. As such it was a culmination, a copy in fact of some great masterpiece in painting. What did diffuse in this area were the basic conceptions and techniques of the art complex, in which this one unique example was found.

The other examples are of a less objective kind. The whirlwind concept, of the Oglala Sioux, for instance, is a philosophical idea formulated with reasonable clearness. What we do not know, however, is whether this concept was developed first and the applications deduced from it, or the reverse. What we suspect is that the idea grew as a kind of drift in the thought of the tribe's wise men and so wended its way until a genius began to think about it and formulate the concept for the convenience of his fellows. In any case, it appears rather technical and not likely to express itself in simple objective procedures. Without this there would be little to imitate, or that could be readily borrowed. Hence, the diffusion

[8] See Emmons, in *Memoirs of the American Museum of Natural History*, vol. 3, part 4.

of such an idea must await a missionary, or a teacher to carry it abroad. Yet, had some literary genius composed a fine narrative embodying the essentials of the concept, then this bit of folklore would have traveled. That this is the correct view, is suggested by the fact that where among the surrounding tribes we do find fragments of this whirlwind complex, they are carried in such narratives.

The case may be clearer, if we choose an example of rapid diffusion among the tribal cultures most resembling that of the Dakota-Sioux. About 1890, after the Indians of the Plains had been confined to reservations and the buffalo were exterminated, they found themselves in trying circumstances. Even starvation threatened them. Remembering that food complexes when built up around an element in the environment carry with them a large part of the culture, one can picture to himself the gravity of the crisis that confronted Indian culture when the buffalo suddenly disappeared. Something like a panic in culture ensued. So all the tribes were in a ferment. It was about at this time that an Indian in Nevada began to go into trances in which he claimed to communicate with the dead and with the gods, who assured him that the white people were to be swept from the earth and the buffalo restored to the Plains. The news of this strange, but highly welcome, belief spread quickly, and tribe after tribe sent representatives to investigate; many of these returned converts and began to preach the new belief. The name Ghost Dance was given it by the whites, because the dances, the trait-complex for a ceremony in the cultures of these Indians, induced trances and, of course, visions.[9] However, this is not the place to narrate the history of this typical example of diffusion; for that the reader must look elsewhere. What we

[9] See Mooney, *Fourteenth Annual Report of the Bureau of American Ethnology,* part 2.

see is a new trait-complex forming speedily and sweeping over an entire area; but in this case the new thing was appealing. The old culture was breaking down, the people were ready for anything that promised satisfaction and well being. Also the objective features of this new trait were concrete, calling for little in the way of headwork. In a general way this brings us back to certain principles stated under another head: there must be a favorable setting for the new trait. In the last analysis, this may mean that one must see something desirable in the new trait before it is borrowed.

However, we have not considered all the factors involved. Tribal individuality is an intangible thing and probably consists in a summation of many minute differences, but the significant thing is that these differences are expressions of originality. As time goes on, many of them may diffuse, yet something new is ever ready to take their places, and it is this infinitesimal output of invention that makes and keeps the tribal cultures different. Without this they would soon level down and lose their individualities. Yet, while whatever uniqueness they possess is due to inventive processes, they are not equally original, for some tribes, like individuals, have the genius to invent the right thing at the right time.

RATES OF DIFFUSION

Among the explanations that suggest themselves for the exceptionally restricted distributions just cited, is the hypothesis that the rates of diffusion vary. Reverting again to the cases of horse and maize, one is quite astounded at the rapidity with which the former and its complex spread in the great grazing areas of the New World. No doubt it spread with equal rapidity, when once crystallized as a trait of Old World nomadic culture. Again maize spread so rapidly in the Old World as to

raise doubt as to its origin and much the same can be said for tobacco. Even less material traits have shown similar speed. Christianity seems to have spread so rapidly in Roman times as to be alarming. As a more primitive example we may again mention the Ghost Dance religion of our western Indians. Still other examples of record breaking diffusion can be found in the literature, but doubtless many, many more are lost in the oblivion of the prehistoric.

Yet, against these can be matched others that have taken centuries to traverse an appreciable area. Take the spread of the copper-bronze complex in the Old World. Unfortunately, the inspiring part of its history is lost forever, but still what we have, backed by archaeological research, gives us the essential outlines. Here again examples could be multiplied, if there were need; but recalling the instances of traits that have not diffused at all, those that have reached but a tribe or two, those that have taken centuries to reach their goal, and finally such bursts of speed as enumerated above, we infer a great range of diffusion rates. As to the causes underlying this difference, we must for the present remain in doubt. To run them down is no less difficult than seeking to account for rates of air currents in the atmosphere above us; yet there is a lesson in the analogy, for, though the air is always in motion, there are prevailing winds, and tornadoes are exceptional.

So on *a priori* grounds we anticipate that the rate of diffusion will vary inversely as the resistance. The identification and weighting of the obstructions encountered is one of the problems we are formulating, and we may pass at once to the further consideration of these questions.

DISTRIBUTION IN UNITS OF TIME

Once before we saw how the distribution of trait-complexes involved a time element. If now, as appears to be the case, there are varying rates of diffusion for the complexes that make up a culture, we must critically examine our earlier interpretation of concentric distribution. In an earlier chapter we cited examples of surface distributions that could be correlated with time-sequences, as observed in stratified deposits; but in such instances the correlations are made between slight variants of a single trait-complex, usually in pottery decoration. In such a case the archaeologist examines the styles of pottery as they appear in the sides of his trench, one above the other. Further, he takes it for granted that if his site is in the locus of a true center of trait-evolution, there will be discernible in the specimens a transition from one form of decoration to the other. This is what we do observe in such pottery series and in many other decorative forms as well. One can thus test out his horizontal zones of distribution—before interpreting them in terms of time (p. 62). But while, as we have shown, we can be sure of our ground when dealing with such imperishable objects as pottery and stone, since at the center should be found all of the types, we are at a great disadvantage when considering the distribution of less material traits that leave no telltale traces in the ground. So, for want of any kind of stratigraphic data, students of culture generally assume that widely distributed trait-complexes are the older; but one should proceed here with caution, because we are comparing separate trait-complexes and not the integral parts of single evolutionary series.

These necessarily abstract statements may be elucidated by some examples. In several parts of South America and again in Central America and the West Indies, a

game is found making use of a rubber ball. As the presence of this game was reported by the early explorers, it cannot be attributed to European influence and though we lack data showing its full distribution, it seems fair to assume that it once continuously covered the whole territory indicated.[10] In contrast to this a peculiar side-blown trumpet is found in but a small part of this area. If then we apply the above principle, we must conclude that since the trumpet has a far more restricted distribution, it is of more recent origin than the rubber ball game. But we have no means of knowing the rate at which each was diffused and so cannot be certain as to the correctness of the assumption. We can, however, approach this question indirectly, for there are also end-blown trumpets found coincident with the side-blown variety, but having a distribution greater than that of the rubber ball. Now that we are comparing trumpet with trumpet, the situation is not so difficult, for it is far safer to assume that the rates of diffusion will be much the same for each variety, whence the side-blown instrument would be recent and the end-blown ancient in origin. Again since the latter has a distribution about equal to that for the rubber ball, we may suspect these two to be of equal antiquity, but only upon the assumption that they would diffuse at equivalent rates. So the rate of diffusion is the unknown factor, for there seems no way of deciding as to the relative diffusion speeds for trumpet vs. ball. We have just observed, in the preceding section, how the rates of diffusion may vary, some traits spreading over large areas with astonishing speed, while others travel at a snail's pace, so in interpreting extents of distribution in terms of time we must make due allowances for variation in rate. Yet the principle of agreement between age and

[10] See chapters on Musical Instruments and Games in Nordenskiöld, *The Changes in the Material Culture of Two Indian Tribes under the Influence of New Surroundings.*

distance from the center of origin, though true in general terms, works best when comparisons are made within the same trait-complex.

In anthropological literature races and cultures are sometimes divided into marginal and central. Those occupying the borders of continents, particularly regions like Patagonia, South Africa, Labrador, etc., are considered as marginal and so the residue of the races and cultures once prevailing in the central areas. According to this idea, we should look upon the Patagonians, for instance, as remnants of the older New World races and expect to find in their culture some surviving traits of the earliest period of occupation. If this reasoning were applied to the Old World, then western and northern Europe would be considered marginal to Egypt and Mesopotamia. In fact, as we shall see, this inference is usually drawn, in consequence of which we expect to find paleolithic cultures underlying the great civilizations. As there are at hand evidences of such stone age foundations in Egypt and elsewhere, this relation seems to hold. But in this case we are comparing little more than parts of a single great complex, work in stone; as we have seen that here is where the method is safest, the result may be accepted with confidence. On the other hand, the Patagonian case involves cultures as a whole, but doubtless here also attention could be fixed upon a single complex, and fairly safe inferences drawn. Yet merely to assert that because Patagonian culture occupies an extreme outlying part of the continent it is a marginal culture, and so the oldest form of New World culture, is too gross an application of the principle to be more than a working hypothesis. For such a method to be truly suggestive, we must deal with specific trait-complexes

In conclusion, then, we find that the rates of diffusion for the successive stages in the evolution of a single

trait-complex are comparable one to the other, and that this distribution, when fully known, can be translated into terms of time-sequence; but that when one deals with separate and dissimilar traits, checks must be sought before equally positive sequences can be inferred.

INTERMITTENT DISTRIBUTION

So far we have proceeded upon the assumption that continuous distribution was to be interpreted as diffusion and so have given our attention exclusively to such types of distribution. There are, however, as noted under the heads of independent invention and convergent evolution, examples of distribution in patches, or in disconnected areas. Such distributions are of two kinds: one of which is to be observed when a trait skips over occasional tribes within the same culture area, the other when the trait appears here and there throughout large areas or continents, singly or in patches.

Taking these up in order, we may find that some of the tribes in a culture area lack the particular trait-complex under observation. When these are random misses in diffusion they can be accounted for as mere accidents, for then they do not in reality break the continuity of the distribution since diffusion can reach around, or encircle, them. Naturally this kind of discontinuity has little significance, but when we observe that certain trait-complexes are wanting in the central group of tribes, though ranging well around the periphery, we at once see a replica of the form for distribution as shown in Fig. 2. Striking examples of such peripheral distribution are to be observed in the Americas, as when we find in the plains of northwestern Argentine types of pottery closely resembling those found in northern Mexico and the adjacent parts of the United States. While it is true that an expert can distinguish between the two, nevertheless the similarities are so great that the

S. America N. America

FIG. 9.—Parallels in Pottery Marginal to the American Area of Prehistoric Civilization.

pottery from these two regions is obviously in a class by itself, as compared with pottery elsewhere. Again, in eastern United States a cruder kind of pottery is met with, whose decorations are not due to colored paints, but consist of designs pressed into the clay while still soft; something like this also occurs in eastern Brazil and in northern Patagonia. In these cases we see not only that there is a large stretch between the distribution areas for these kinds of pottery, but that the cruder type of pottery is always on the outside. This at once calls to mind the successive diffusion zones of a trait-complex, and suggests that at one period the whole range of country from Canada to Patagonia was given over to cultures with stamped pottery and that at some later time a special type of painted pottery extended likewise continuously from southern United States to northern Argentine. From what has gone before, this seems a valid inference, but recalling our caution that one should always seek a check on these inferences,we may inquire whether archaeologists have found these forms of pottery underlying the later cultures of Mexico and Peru. So far, nothing of this kind has been reported; and though it may yet be discovered, the fact that excavations to date have not revealed it, cannot be ignored. Going farther afield, we find pottery with simple stamped decorations in northeast Asia, particularly in southern Russia, and in some parts of neolithic Europe. All this pottery looks somewhat alike, but so far as can now be seen the design systems differ. This being the case, can we say that this is the same pottery trait throughout?

So far in this discussion we have avoided reference to the history of decorative design, because such graphic forms are extremely treacherous in that they are intended as symbols for the beholder to interpret. We are thus so habituated to seeing ideas behind the figure, that our suggestive impulses lead us to feel identity in what may

FIG. 10.—Peripheral Distribution of Certain Culture Traits in the New World.

be objectively different. The literature on the swastika[11] is a classical example; every design that has an analogous form to this, even the spiral, has at one time and another been considered a swastika; and most assuredly, if one goes about the world in this frame of mind, he will find what he seeks almost anywhere. We must, therefore, proceed with caution in declaring identical the simple stamped designs on the pottery from each of these widely separated areas, and not until a detailed study of the designs for each area has been made can we make a more positive statement.

Returning to the situation with respect to North and South America, we find a few other traits with distributions similar to those for pottery. As in the western plains of the United States, the Indians would sometimes cut off a finger and offer it as a sacrifice to the sun for safety or success in war; and again among a few tribes in northern Argentine this same custom was found. Nothing just like this was found between these two points, but there was a vast deal of sacrificial blood letting and even the taking of human lives among the cultures ranging from Peru to Mexico City. This again resembles the typical trait-distribution form (Fig. 10) since we find on the margin what may once have prevailed at the center. However, this interpretation is more satisfactory than the preceding, because we have a check in the vastly more intense network of similar sacrifices at the center. Pottery is also intense in Mexico and Peru, but so far archaeologists have not been able to fit into the central series the marginal styles of pottery we have noted. Should they once so articulate, there could be little doubt that the discontinuity of distribution we have noted was apparent and not real.

How easily one may be led astray in such interpreta-

[11] See Wilson, Thomas, in *Report of the United States National Museum for 1894.*

tions is shown by the occurrence of peculiar bent pieces of wood found in archaeological sites in New Mexico on the one hand and northern Argentine on the other. These look alike and, therefore, are susceptible to the same interpretations as just given to pottery and the sacrifice of a finger. Yet it so happens that these objects are still in use,—in the United States as hitches to the warp in belt weaving, in the southern Andes as hitches for llama

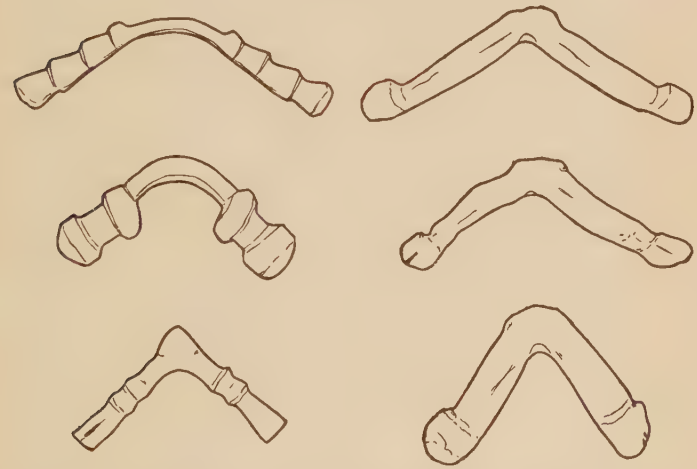


FIG. 11.—Prehistoric Wooden Objects from the United States and South America Respectively.

cinches. While one may guess that originally they were all weaving instruments, that would be a guess and nothing more. For all we know to the contrary they were independent inventions made in response to similar problems. These concrete cases thus call attention to one fundamental difficulty in comparing trait-complexes, that of deciding when they are truly identical and not merely accidental convergences. Manifestly we can only form an opinion; but this can never take the place of scientific

proof. It is certainly the weak point in many arguments for a single point of origin for all culture traits. This, however, raises a point to be considered presently. What we conclude, then, is that when the discontinuity in distribution takes the peripheral form and the identity of the successive traits is assured, it follows that the central hiatus is due to advances in trait-evolution among the central cultures. We turn now to the second form of intermittent distribution, that in which widely separated areas of diffusion are found. The literature contains a number of examples such as age-grade societies for men in central United States, East Africa and Melanesia.[12] A closer view of these three localities reveals that in each there is a characteristic distribution area, or the usual type of diffusion area for a trait-complex. This is quite in evidence for the North American area, where we find that the diffusion of the trait-complex closely coincides with the culture area of the Plains Indians, and further, that the complete trait-complex is found among the few central tribes only, that is, societies ranked in an age sequence; but that among the peripheral tribes we find similar societies without the age feature and still further afield some of the peculiar functions of the central societies unattached to any such society. This is quite significant, for we see on the margins of the distributions some of the loose elements composing the societies at the center. So looking at the phenomenon as a whole, we see three widely separated distribution areas for age-grade societies and in each case they seem to have been evolved at a center and diffused outward. Thus we not only have disconnected distribution, but independence of centers. In such a case, it would be futile to say that by some telepathic means yet undiscovered these centers communicated one with the other.

[12]See Lowie in the *Anthropological Papers of the American Museum of Natural History,* vol. 11, part 13, *or Primitive Society.*

These few examples may suffice, but many others can be drawn from the literature of anthropology, as when the cultures of Mexico and Peru are compared with those found in Asia, a list of which we have given in another section. Unfortunately, but few of these trait-complexes have been studied in detail (see pp. 58 and 61), but when such an investigation has been carried to completion, it appears that in each area there is a center of distribution, coincident with the general culture center, and that the life histories of traits in America are different from those in Asia.

So it appears that in all attempts to interpret separate distributions, due regard should be given to their relation to culture areas. If confined to such an area, and appearing in zones, it is safe to infer that the trait in question once covered the whole area; but, if occurring in different parts of the world, with localized distributions conforming to the universal mode, then we may assume that each grew up in a different way.

CULTURE AREAS AND WORLDWIDE DISTRIBUTION

When we come to look upon culture as a worldwide phenomenon and see that even in the remote past some complexes almost encompassed the globe, it becomes necessary to consider the culture area in its relation to the whole. However, we must not take it for granted that diffusion began after the world was populated by tribes with no culture. One can, of course, conceive of a time when the habitable surfaces of the earth were covered with tribal groups innocent of all culture content and so presenting a virgin field for diffusion, but no such condition ever existed. It is obvious that the human race grew by expansion and that new groups were formed by the separation of old tribal groups, and that each of these must have carried with it a culture content. Nor

were these stores of tribal culture ever equivalent, but each representative of the level at which it differentiated. Hence, the very wide distribution of some traits, as the fire drill, chipping of stone, the lance, etc., may be due to the expansion of the race rather than to diffusion. It is thus that the logic of the situation demands that the culture area, as we have defined it, be regarded not as an absolute, but as a relative differentiation in culture traits. Further, as we have found the rates of diffusion to vary enormously, it is far from impossible that a few traits will traverse a number of culture areas, but to do so they must be traits that are immediately practical. The culture of the world is therefore not to be conceived of as so many separate blocks spoken of as culture areas, but as a gigantic complex in which partial segregations occur. Finally, to briefly recapitulate the status of the culture area, we find such areas not fully isolated, but articulated one with the other. Nor are they everlasting, but subject to shifts and assimilations. What defines them are the culture centers, but these centers are the springs of originality, from which come new traits to set their stamp upon the area. What we see, then, as we look about over the earth, are a number of culture nuclei, more or less in touch with each other. We all know the history of the world's great centers and how they were mutually influenced, but even among the primitives something filtered through, as shown by the data for distribution. Again, looking at culture as a whole, we note super-centers, or great centers of influence, as Egypt, Crete, Athens, Yucatan, Peru, etc. And something like this is observable among the outlying primitive centers. In such a perspective one comes to a nearer view of culture at work. What we see is strikingly analogous to volcanic activity, these different centers appearing as so many crater cones of varying diameter, all belching forth the molten lava of culture, their respective lava

fields meeting and overlapping, but, as in true volcanoes, the lavas differ one from the other and from time to time, and each crater contributes something new to the growing terrain. Again craters become extinct and new ones break forth in between. But the important point is that in all of them once burned the fire of originality. No view of culture recognizing but a single crater from which all is supposed to flow, can stand before the situation as now revealed.

BIBLIOGRAPHY

Baikie, Rev. James. *The Sea-Kings of Crete* (*The National Geographic Magazine,* vol. 23, pp. 1–15, Washington, 1912).

Balfour, Henry. *Structure and Affinities of the Composite Bow* (*Journal of the Anthropological Institute of Great Britain and Ireland.* vol. 19, pp. 220–250, London, 1890).

Emmons, G. T. *The Chilkat Blanket* (*Memoirs of the American Museum of Natural History,* vol 3, part 4, New York, 1907).

Evans, Sir Arthur. *The Palace of Minos,* a Comparative Account of the Successive Stages of the Early Cretan Civilization as illustrated by the Discoveries at Knossos. Vol. 1: The Neolithic and Early Middle Minoan Ages. London, 1921.

Holdich, Thomas Hungerford. *Political Frontiers and Boundary Making.* New York, 1916.

Johnson, Douglas Wilson. *Battlefields of the World War*—Western and Southern Front. A Study in Military Geography. With a foreword by Gen. Tasker H. Bliss. American Geographical Society, Research Series 3. New York, 1921.

Lowie, Robert H. *Plains Indian Age-Societies*: Historical and Comparative Summary (*Anthropological Papers,* American Museum of Natural History, vol. 11, part 13, 1916).

Primitive Society, New York, 1920.

Mooney, James. *The Ghost-Dance Religion and the Sioux Outbreak of 1890* (*Fourteenth Annual Report,* Bureau of American Ethnology, part 2, Washington, 1896).

NORDENSKIÖLD, ERLAND. *The Changes in the Material Culture of Two Indian Tribes under the Influence of New Surroundings.* Göteborg, 1920.

SAPIR, EDWARD. *Language. An Introduction to the Study of Speech.* New York, 1921.

SEMPLE, ELLEN CHURCHILL. *Influences of Geographic Environment on the Basis of Ratzel's System of Anthropo-Geography.* New York, 1911.

STEENSBY, H. P. *An Anthropogeographical Study of the Origin of Eskimo Culture* (Meddelelser om Grønland, vol. 53, Copenhagen, 1917).

WILSON, THOMAS. *The Swastika, the Earliest Known Symbol, and its Migrations;* with Observations on the Migration of Certain Industries in Prehistoric Times (Report, United States National Museum for 1894, Washington, 1896).

CHAPTER IX

ORGANIZED DIFFUSION

One of the most interesting aspects of culture is its dynamics, or the mechanisms existing among its trait-complexes for the acceleration of diffusion. The most conspicuous of these are the political, military, and religious complexes. The spread of culture, as considered thus far, was insidious and without concerted group action. We must now consider the deliberate and purposeful propagation of culture. However, this does not imply that the group is fully conscious of culture or of its social complexes, but that it is conscious of some phase of culture which it desires to extend over the earth. Usually nothing more is involved than the desire of political and military leaders for new fields of activity.

MIGRATION AND COLONIZATION

The movements of individuals from group to group, or the change of permanent individual residence, is quite a different matter from the trek of a whole tribe. Obviously, when an individual joins a tribe of different culture, he brings his culture habits with him, and though he by necessity begins to learn anew, the chances are that in the end some small residuum of his native culture survives. If one reviews the tribal mythologies and histories that have been so faithfully recorded by anthropological explorers, it is plain that such individual movements were not uncommon. There was also a great deal of travel, or intertribal visiting, not usually for the purpose of spreading culture, but for the mere joy of the

thing. Yet, like all tourists, these primitive wanderers were unconsciously sowing the seeds of culture in strange soil, and just as the gentle breezes of a perfect day may mix the flora of hill and dale, so these wandering individuals spread the elements of culture.

When considering analogous biological problems, it is usual to speak of casual and insidious migrations as *infiltration,* implying that in spite of such barriers as the group may set up, some foreign elements will slip through. The same term might well be applied to the diffusion of culture, which though facilitated by it, is nevertheless not dependent upon bona-fide immigration. But when a whole tribe moves, the case is different. Moreover, we sometimes delude ourselves with the thought that the immigration problem is something new, and pertains to a modern world, whereas it is as old as the Stone Age. It becomes a problem only when displacement is threatened. This may come about in several ways. One way is by the acceleration of infiltration to the saturation point, and another is by colonization. Yet, we usually conceive of colonization as an organized effort to extend culture by an expansion of the habitat, a trait belonging to the political complex. In this advanced age politics and colonization often go hand in hand, but this process is so fully delineated in history that no further comment is necessary. Further, no matter what the immediate motive is in colonization, the means by which the end in view is attained consist in the transplanting of population and culture.

THE MISSIONARY IDEA

The mere mention of the word *missionary* automatically calls to our minds the modern individual and organized efforts to "convert the heathen." But there are other missionaries at work besides those who can be designated as Christian and, as we shall see, all these are

merely so many different kinds of culture missionaries. For example, what are we trying to do when we set out to convert the heathen? The answer will be that we are bent upon changing his religion by teaching him the Bible. But a little reflection will show that there is more involved than acquiring a knowledge of the Bible, for the "heathen" are to be made to live according to the ethical and industrial notions of the missionaries. If the "heathen one" has more than one wife, he is to be induced to be content with one; if he has been disposed to leave certain heavy work to his women, he must be enlightened as to the proper work for women, as the missionary sees it; if he lives in a grass-covered hut, he is shown how to build a house; and above all, if he does not swathe his body in clothing, he must be immediately draped, no matter how disastrous to sanitation and comfort such a proceeding may be. Again, if the missionary is English, he sets out to teach him to read and write that language. What is being done then, is an attempt to displace the original culture. The zeal and justification for this come from religion, but it is not merely the tenets of this religion that are carried to foreign lands.

Doubtless all the great religions of the world were spread by missionaries, but none of them seem to be so completely dominated by the missionary idea as the Christian religion. The one great injunction of its founder was to teach all men to the farthest corners of the earth and call them to the universal democracy of the righteous life. From that day to this, men have braved the greatest dangers to carry the principles of Christian belief to non-believing peoples. We may conclude, then, that conscious, organized missionary work is one of the dominating characters in cultures of the Euro-American type. Before Columbus found the Americas, these missionaries had converted about all of Europe and, if we read history aright, it was the force of mis-

sionary zeal that made the voyage to America possible. From that day to this, the Christian missionary has followed at the heels of the explorer. But he has not been alone. A recent writer has said that no sooner is it announced that a new group of peoples has been found, than the trader, the missionary, and the bootlegger set out in one mad race to accomplish its ruin. This may not be a true picture, but it cannot be far wrong, for the trader and the missionary, no matter how great their enmity, work hand in hand, to spread the culture of their own kind.

The motive back of it all is not difficult to define, for while it may be true that the immediate aspirations of both the trader and the missionary are selfish, there is nevertheless underlying them a feeling that the heathen are to be reclaimed for their own good. In other words, we seek to spread our culture for humane reasons. If the poor benighted creatures resent the implication and attempt to save their culture by suppressing these missionaries, we give them a taste of militarism.

Perhaps the greatest of these missionary movements is peculiar to English peoples. On the religious side, we know this is true, for where is there a mere hamlet church in which there are not weekly collections for foreign mission work! In this our own country plays the larger part and there are few places in the marginal cultures of the world where the American missionary is not in evidence. That a great deal of this work is ineffective because so unsystematic is not the point, for the cumulative effort and its eternal persistency will win out at last. The significance to us in this discussion is not that the missionary idea in general is peculiar to our time, for it seems to be present everywhere in some form, but that for once we find among ourselves and a few Europeans, a missionary movement that encompasses the world. It is not merely a church or a trade matter, but springs from a

deep social feeling that we have something all mankind must share. So the foreign missionary and the trader are but the symptoms of deeper culture movements. Hence, one of the important factors in the spread of culture is the general missionary idea, which seems to have a primitive background, but which has become somewhat rationalized and bids fair to become a socially directed force of the greatest moment, when it is made a matter of systematic procedure.

The reader may question the propriety of so ruthlessly dissecting one of the most sacred traits in our culture. Yet, if we had chosen a more primitive example, no such reaction would have come. The whole procedure would have been considered highly appropriate. Further, the backward state of anthropology today is due to its timidity, for so long as only savages are studied nobody cares, the assumption being that the phenomena are wholly irrelevant. But now, having taken culture for what it is, a world phenomenon, we should not hesitate to lay bare its mechanisms, for we are now facing a new aspect of our problem. So far we have been concerned with the insidious spread of culture, where the mere setting of all the factors in the case was such that cultures would spread as if according to natural laws alone. But now we are concerned with a more or less deliberate attempt, an organized effort of the tribe to accelerate the process. The tribe is no longer content merely to enjoy the culture it has, but is so in love with it that it seeks to carry it abroad. The difficulties in dealing with this subject are obvious, for we are laying cold hands upon the very best that is in us, but it is necessary to see that precisely the same relation holds even in the breast of the savage devotée. In short, every great culture movement of this type has sprung from the noblest of feelings, viz., the enlightenment of the world for the good of all. Christianity, Islam, Buddhism, in the Old

World, and again in the Americas, the sun cult of the Inca, the human sacrifice of the Aztec, the Midéwin of the Algonkin, the more modern Ghost Dance, and the present Peyote cult were all backed by the same kind of sacred and altruistic motives. For each of them men and women were ready to endure tortures and death. And certain it is, that if we could lift the veil of obscurity that hides the cultural history of men, this list would be swelled to enormous proportions. So why should not *our* culture inspire us to be missionaries!

WAR AND MILITARISM

If one should gather into a library all the books that exist and set on one side those dealing with war, the result would be startling. Not only would historical works be included, but also a large share of both fiction and poetry. Even the Bible might be consistently placed there, if one disregarded the New Testament. The symbols of virtue are still, for the most part, echoes of the battlefield. The sword, the shield, the gauntlet, armor, etc., are objects around which have evolved trait-complexes indispensable to our culture. A little reflection along this line will bring home to us the universality of war and the large place its complexes hold in the cultures of the world. So, since the wars of peoples fill our histories, it may be fruitful to pause for a brief survey of this culture phenomenon.

In the preceding section, attention was called to the deliberate spread of culture by the tribal group, but if we turn to the pages of history we find the preacher of the new faith often backed by armed hosts. It has always been so, for though the missionary approach the heathen or the unbeliever in piety and peace, he is bound to meet with resistance. Anyway, at his heels follow his countrymen ready to defend his and their ideals. War is then inevitable. It does not follow, however, that war always

accompanies the spread of culture, since as we have seen, culture can be diffused without a missionary movement or any other organized drive. But wherever drives of this kind are projected, war follows. We must, therefore, consider the war complex—militarism, conquest, despotic power, etc.—as one of the mechanisms by which man seeks to diffuse culture over the world.

Everyone who lived through the tragedy of the past decade has a fairly definite idea of militarism, its methods, its ideals, its failures, and its evils. We have been disposed to congratulate ourselves that for once this dread evil has been driven from its last lair and that henceforth the world will proceed on its way without fear. No doubt this is too optimistic a view, but assuming that this great reform is now assured, we can all the more clearly comprehend militarism as a culture complex. In the early stages of the European War we heard a great deal of the Teutonic claims for *kultur*. The way in which the term was used led the uninformed to suspect that it stood for something peculiarly Teutonic, the like of which was not to be found among other peoples. In many cases, it was definitely stated that Germany was the sole and only home of *kultur*. But its partisans went further; they stated that this thing they called *kultur* was so superior to the possessions of other peoples that the latter were not only contemptible by comparison, but had no rights except those to be granted at the pleasure of the followers of *kultur*. Some writers even elevated *kultur* to the superhuman level, declaring it to be the direct gift of God, and they in consequence manifested a zeal to smite all who doubted this theory.

In the face of what has gone before, all such statements must seem a little strange. *Kultur* is nothing more than our term culture and was long used with a similar significance in Germany itself. What the imperial enthusiast meant then is simply that Teutonic culture was of a

definite and distinct type. The reader who has even scanned the preceding pages is now prepared to estimate the validity of this assumption. He knows that the culture of Germany belongs to the Euro-American type and that it is but slightly different from the cultures of France, England, or America. To set up a claim, therefore, to uniqueness in culture would be flying in the face of the plain facts. One must therefore doubt if Germany really put forward a claim to distinction in culture, but suspect that her thoughts were centered upon some one phase of life only, which was thereby magnified to such a degree that it threw a kind of glamor over her culture as a whole. It may, then, be worth our while to look into this case for further light on the culture problem.

Before we take up this subject, we should also note a pronounced fervor of devotion to this *kultur*. It was not only conceived of as incomparably superior to anything else in the world, but this fervor was so intense that there was a strong feeling that every Teuton should make it his first duty to spread this *kultur* over the earth. All who reacted unfavorably to it were to be disciplined with blood and iron. It is difficult to see any difference between the utterances of many Teutonic zealots and those old Churchmen of a past age who burned and tortured all who ventured to doubt the correctness of the values they placed upon Christian beliefs. Such tortures were spoken of as "glorifying God." In each case, to question the justness of the evaluation was sufficient cause for the most brutal discipline man has yet devised. This comparison alone raises the suspicion that the history of the world can furnish other examples of the same tenor and that we are dealing with a type of action which is in no sense peculiar to Teutonic peoples. In other words, we must consider this phenomenon as a probable manifestation of culture principles and therefore not as peculiar to Germany alone.

Turning now to the question as to what foundation there is to the claim that Germany had a vastly different culture all her own, we may be reminded that her material life presents the same characters as those of some other peoples. She uses railways, steam and electric power, automatic machinery, etc., just as we do. Nor can she truthfully lay claim to the initiation of many of these great achievements. Some great discoveries have been made by her people, but in contrast to the great array of such things as the phonograph, electric light, telephone, sewing machine, bicycle, automobile, photography, etc., these are in the minority. Even the submarine and airplane, which she has vaunted so distinctively as her weapons, did not originate there. There is, therefore, no basis for a claim that Germany has done more than her share in the development of this phase of our culture. The chemical achievements of Germany are of the greatest merit, but do not stand for a distinct type of action that is peculiarly German, and though it is conceivable that Germany may in the future excel for a time in this respect, to be in turn outstripped by some other people, she has not yet attained the uniqueness which her partisans claimed for her.

However, the things that Imperial Germany took greatest pride in were "efficiency," military power, and social discipline from above downward. She professed not to believe in suffrage, but tolerated it from necessity only. If popular suffrage could have been abolished with safety, that would have been done quickly; yet, the fact that it could not is evidence that Germany is merely a part of a great culture area and that the trait of voting could not be kept out. Thus, her difference on this point is but one of degree.

Yet there is one particular in which she led all others, for German militarism stood at the head of the list. This is the one trait of our time that surely centered in Ger-

many. It was also rather strong in Austria, France, Italy, England, Russia, and Japan. Yet, no one need be told that the center of this development was Germany and that from her came the chief stimulus. Curiously enough, we have here a distribution around a center just as was the case in more primitive culture areas. Why then do we find the nations immediately surrounding Germany to have been the next most typical in this trait and those far away the least typical? At once, it will be said that it was a protective measure against Germany. So it was, no doubt, but Imperial Germany seems to have taken the view that on her part it was necessary as a protection against France and Russia. Now, we suspect that both these statements are true, for there was a cultural movement in Central Europe, and these great groups of people reacted to each other in response to a complex of conditions to be understood only from the history of the period, but the geographical center of this militarism was Germany.

We frequently read that German militarism originated in the ideals of some of its great statesmen like Bismarck, while to other students it seems to go back to Frederick the Great, if not farther. Yet, this time, the reader is aware that the tracing out of ultimate origins to culture traits is hopeless, for if pursued long enough we should but arrive at the birth of the first man, for it is all part of one great culture flux. What seems to have happened in Germany is that from time to time a great genius arose who, by some achievement, added an increment of intensity to the love of the military ideal. Thus Germany was not only the chief stimulator in the development of militarism, but was in turn the most deeply moved by suggestions from without. So we doubt if the presence of this trait in Germany can be so simply explained as by attributing it to the ideas of one or two great men. Rather, we suspect it to be a complex of historical and

other events that almost defy analysis. In any event, we see that the case exactly parallels other culture phenomena. To explain just why Germany should be the center of militarism, would give us a theory of the formation of every culture center. That is more than we can hope to attain in this brief study. What we do see is the strict parallelism of militarism to other traits of culture. Thus, in our detailed examination of culture and political units, we saw how the type would center in one such political unit and radiate outward to its neighbors. Also, it was clear that, in a culture area composed of many independent political units, individual traits of culture tend to center now in one of these units and now in another. This is exactly what appears in the case of militarism, which so recently centered in Germany, but shows a tendency to shift elsewhere. That it will stand as the exclusive culture trait of Germany is not to be expected.

Again, militarism is not a new thing in the world; Rome was at one time the center of militarism and that there is a historic connection between this and the Imperial German ideal is beyond doubt. Even the title of Kaiser is of Roman origin. Nor was militarism an invention of the Romans. In ancient Europe and Asia there are evidences of it on every hand and even in the New World the Spanish invaders found two centers of militarism in the Americas, the Aztec of Mexico and the Inca of Peru. To this the partisans of Imperial Germany sometimes replied by claiming that the militarism of Germany was vastly more thorough and systematic than any that went before. In support of this, they called attention to the way in which the military power seized transportation, food supply, manufactures, etc.—in fact, organized the whole people into a vast army. So far the facts are as stated, but militarism everywhere has followed the same method. Those who have made them-

selves familiar with the rule of the Inca in ancient Peru know that the military power sought to control every phase of life. In some ways, the socialistic utopia was realized, for there was no individual ownership of lands and no capitalism. The government dictated to each person what he should do and when. This domestication of the Peruvians had gone on so long and with such fine precision, that they were helpless when the Spanish forces usurped the places of their rulers, or rather they were so completely disciplined that they obeyed the new ruler as readily as the old. The gloss that historians sometimes throw over the conquest of Peru by a handful of Spanish soldiers is little more than fiction. What really happened was that under the guise of guests, the adventurers reached the capital and there seized the offices. This example is particularly instructive because militarism in Peru was free from direct European influences.

In brief, then, the essential outline of European militarism is of a type familiar to history. The efficiency of Teutonic nations was merely the exercise of this power in directing the greater part of the people's activities. Efficiency may be desirable or undesirable; a tiger may be efficient in the man hunt. Further, militarism must always rest upon force, and asserts that there is no right other than might and that other peoples have no rights whatever. Populations are to be destroyed, if it is convenient for the military power to so treat them. Those of us who read the frequent utterances of Teutonic leaders will recall how they always spoke of territory that was to be conquered and held by the sword. This again is as old as militarism, and is the ultimate logical finale of the militaristic idea.

Deeply rooted in the complex of militarism is the ideal of duty and adoration. Thus, a kind of religious zeal moved the Imperial Germans to look upon the military system not only as a kind of sacred possession, but to

believe they had a holy mission to spread the system by force and grind under it all the peoples upon whom they could lay hands. This again, is not a new thing in the history of militarism. Mohammedanism was a parallel case; there are others of less magnitude and no doubt hundreds that are lost to history. The English, French, and Americans were startled at the very seriousness with which the Imperial German regarded himself. He took the fact that he felt himself the superior of all people and the chosen of his God, as equivalent to the literal truth.

Now every anthropologist knows that even the most primitive groups had the same kind of idea. For example, the Sioux Indians of our Plains taught their children that they were the only real people and that all others were inferior. We have noted once before that if we run over the names of tribal groups in primitive languages, they usually signify, "we the people," or "the men," the idea being that they are the superior group. Further, they are usually ready to fight if this view is challenged. This attitude is far from unknown in England and America, but here there seems to be a deeper understanding of the relative positions of culture. Hence, Imperial Germany's favored claim to superiority and the divine right to smash and destroy was merely the expression of one of the oldest primitive characters. Her former infatuation with her own military creation is thus again merely the ever-recurring type of sentiment found in even the most primitive groups. It does not belong to the advanced period we assume as the next great forward movement in culture, viz., the self-conscious culture group.

In conclusion then, we find that the *kultur* of the Germany of yesterday was merely culture. She had no monopoly of the type, but could claim ascendency in the military trait. In the working out of this trait she was

somewhat in the lead. Lastly, the claim that she had a duty to perform in forcing the military trait upon the world, sprang from the same old primitive feeling of tribal superiority that must have actuated the early cave men of western Europe ages and ages ago, and has continued to function from that day to this, even among ourselves.

CONQUEST AND DISCIPLINE

We set out in this chapter to review the factors involved in the deliberate spread of culture and have found in militarism a type of mechanism often utilized in such diffusion. The war complex is a fine problem in itself, for we find here again *adhesions,* including missionary traits, together with despotic power and efficiency; also centers of distribution from which the elements of the complex are distributed. But one of the logical components of the military trait is conquest and discipline. Under this caption one naturally turns to the latest center of militarism, and so to Imperial Germany once more. Conquest and discipline are two terms of no uncertain import and it is by the latter that German militarism proposed to extend culture. The world professed to be startled when the great war leaders announced that they expected to subjugate all people, but this is no novelty in the history of culture. Earlier leaders of German militarism had proceeded in the same way, as when the French provinces of Alsace and Lorraine were seized. These French were to be made over to the *kultur* pattern immediately and with thoroughness. Rigorous discipline was to be applied to them, forcing them to speak German, and to show outward respect for authority. It was even said at the time that only a few years would be needed to make these people absolutely German. The same method was pursued in the case of Schleswig-Holstein. Again, in the annexed states of Poland, the process was

the same. It was discipline, even to the most minute details of life, that was regarded as the means to this end. One need not recite the details of this discipline. It was thorough, and correspondingly efficient.

In another part of this discussion, we were reminded of the great faith our own people put in education. With us, it is the great method of procedure, and we hold to it with the zeal of a religious enthusiast. As to discipline, we expect the educated to discipline themselves. Now, we have in the past often gone out of our way to praise German educational systems because they seemed to be more thorough, or rather more rigidly disciplined than ours. But we lost sight of one great fact. Germany with all her zeal for learning did not put her faith in education and it was not by education that she expected to speed her *kultur,* but by force and discipline. This is again merely the military ideal which demands absolute obedience, even to the irrational whims of authority.

Yet all military systems have their dark sides. The Romans looked at the business in much the same way. They pinned their faith upon such discipline to the extent that even the then barbarous Teutons and Britons were to be Romanized by the discipline of militarism. Their failure is a matter of history, but historians even at this late day try to explain it as due to the incompetence of a few rulers, and ignore the cultural problem involved. Moreover, when the only bond between peoples is the force of discipline from without, the very thoroughness of their discipline becomes a menace, for the moment the interests of a large part of the men in arms run counter to those of the residue, the former need but assert themselves and defy the power that made them efficient. This is clearly the case in the fall of the Roman military system and if we read history aright, of every other vanishing military system of which we have record. It was so even in the New World. The Aztec of Mexico

City had by force of arms brought under their discipline about the whole of Mexico before Cortez arrived, but many of these smaller states were just as restive under the iron rule of the Aztec as were Alsace and Lorraine under the recent rule of militant Germany. So when Cortez appeared to fight the Aztec, it was largely the armies of these states that won the day for the Spaniards. Spain in turn set up the same kind of a system and went through about the same experience.

The point, then, is that as a rule, when militarism evolves, it carries with it a discipline complex, the purpose of which is to displace tribal control. By force one's neighbors are to be made to follow in the beaten path. So discipline attempts to substitute new habits for old ones, and since in history we are committed to valuations of culture, we may say that militarism aims to domesticate the wilder folk on its borders. Now, it may not have occurred to the reader that conquest is normally projected from a culture center, at least from the center for the military complex, and begins with the unification of the most typical culture groups in the nucleus of the culture area. The next step is to subdue the entire culture area, which eventually brings militarism in contact with outlying areas, many of which are far more primitive in culture. Not having been subjected to such discipline, these outlying tribesmen appear wild and untamed, so further progress in the spread of culture requires their subjection. But it not infrequently happens that the wilder folk are far better able to take care of themselves than the more domesticated. As we have stated, militarism has no trouble with the domesticated, where it takes the place of the former rulers, but with the wilder folk it must often wage a war of extermination. A clear-cut example of this is found in the New World. We have previously commented upon the militarism of ancient Peru and the ease with which the population was

seized by the Spanish soldiery. Even these hardened adventurers praised the peaceable docility of the native population. They did not, however, understand that these people had been so thoroughly disciplined that they knew no other way than to wait for authority to say what should be done and then proceed to that end. Had they understood this, the Spaniards would have been less confident of their particular fitness to organize governments quickly and make them efficient. For instance, just south of the Inca lived the Araucanians, who were a wilder free people. For many years previous to the arrival of the Spaniards the military Inca had sent armies into the south to subdue the Araucanians and eventually force them to become truly domestic. But the task proved rather difficult and no great progress had been made when the Spaniards usurped the power of the Inca. But once firmly established in Peru, the Spanish authorities took up the task. In this, they never were successful for these Araucanians kept their autonomy and practical independence until they were merged into the republic of Chile. All the interesting details of this long struggle of a wilder free people can be had from the historical accounts, but we are concerned now only with their significance. Nor need we recount the many other examples from other parts of the world. What seems to happen in such extreme cases of systematic discipline as we find in Peru is that the individuals become so habituated to a routine that is imposed from without and with conditions that rarely change, that they lose the desire to act for themselves when confronted with new conditions. Liberty of action and individuality mean nothing to them as compared with the wilder free peoples. On the other hand, militarism must always set its face against such liberty and individuality, except possibly in the very few who lead.

The ideal of America has always been to preserve the

best that is in man's wildness and to so order its necessary discipline that the individualities of its citizens should be conserved. In how far it has been successful is not to be discussed here. It has set its face against militarism and force as the fundamental basis of culture. Thus the Germans once boasted of their superior discipline and the refined system by which they directed even the more intimate affairs of private life, as proof of the weakness of America's position; but we see that the final outcome of such a system will be a kind of compulsory socialism. It is fair to conclude, therefore, that the ideal state, as cherished by militarism, is one whose boundaries are so far afield that there will be no wilder peoples, or in other words, that the whole world would be uniformly disciplined and controlled from a single center.

Now after this rather long ramble around the phenomena of conquest, we are able to state one of the problems it presents. We see that even when the spread of a culture is sought by a central tribal unit, backed by a strong military mechanism, the universal form of culture area persists. Each successive zone is less domesticated, or as we say, contains wilder and wilder tribes. No type of militarism has yet succeeded in eliminating these differences within its jurisdiction. Again, militarism is a part of the political complex and functions as such, for what it seeks is to subordinate tribal control. Now it appeared in a previous discussion that culture uniformity and political unity do not correlate and that the pursuit of the problems thus presented had laid the foundations of the scientific investigation of culture. What, then, is the true relation of conquest to the spread of culture?

Both the data of history and anthropology suggest that the rule is for conquest to follow diffusion. As to the fortunes of militarism, the facts are plain; time after time it triumphed even to the extent of welding all peoples

of similar culture and sometimes succeeding in annexing a few of the nearest wilder peoples. First, it is the nucleus, or the central cluster of tribes that is subjected; then attention is given to the surrounding ring of tribes. But long before this stage is reached, diffusion began. So when the military complex comes upon the scene, it needs but to follow the broad well-blazed trail of spreading culture. Rarely does it lead culture even in its assaults upon the wilder folk. Indeed it may be doubted if it greatly facilitates diffusion, except as it accelerates colonization.

So far we have not considered whether there is a fixed order of diffusion, though we have established the fact that the rate varies, which in a way will amount to the same thing in the end. So it is conceivable that some one of the culture complexes constituting the universal pattern of culture will lead. This problem has not yet received the attention it deserves, but the data at hand show a tendency for material complexes and art to cover larger areas than such complexes as relationship systems and ritualism, from which we conclude that the former are the true pioneers in diffusion. Also, the history of trade and colonization in America affords many instances of how quickly material objects and techniques were spread among the Indian tribes; yet, as we all know, many of the surviving aborigines are still Indian in thought and belief. So it seems safe to conclude that material trait-complexes will be the first to reach the outlying wilder folk, and naturally enough, along with them will go trade and some knowledge of language. Further, it is these insidious drifts in culture that set the stage for conquest. The old saying that "trade follows the flag" is true in a narrow sense only, for initially it is the flag of militarism that follows trade.

The position of conquest is now revealed. It requires for its functioning a fair uniformity in material traits,

the arts, and in trade. It supplants the old tribal political complex, or at least controls it, but beyond that it may show little concern. The Pagan Romans seem to have troubled themselves not at all with the religion of the Barbarians or with their true social organizations, but did their best to set up their system of law and property in which they professed to see the salvation of the world. It was not until the leaders of culture in the true center of things either developed a missionary spirit or became inspired with the intrinsic merit of their culture, that the military mechanism was hurled against religious and social complexes. The two outstanding examples are Christianity and Islam.

In our study of diffusion we observed that the evolution of culture has been toward an ever and ever greater extension of its trait-complexes, so we anticipate that each grand triumph of militarism will realize more distant geographical bounds. It is, therefore, quite conceivable that the continued diffusion of Euro-American culture may be preparing the trail for a new military drive that will reduce to submission all the national groups of the world, except possibly a few pitiful remnants of the far outlying wilder folk. Not so long ago an attempt was made to unify the nucleus in Europe. It was abortive, but culture is resetting the stage in the same old way. Material traits, art, and trade are threatening to shift to a New World center, yet let us hope that the final outcome of this is not to be a new burst of militarism.

While militarism is justly condemned, its power seems vastly overrated. Its triumphs are but short-lived. Even should the next great trek of militarism encircle the globe, it will do no more than hasten the unification of material culture and will utterly fail to stamp out other phases of culture now localized as geographical types, for the same culture movements that have been working from the dawn of the world down to the present will

go forward to fulfill their mission; and it appears that the spread of culture is hampered only by geographical bounds, for the type spreads itself over an entire geographical area regardless of political boundaries, war of peace. If a group of people come into contact with another, no matter how, there will always be an interchange of culture by which one or both are modified. Hence, it is not unlikely that though militarism ruled the world it would find itself impotent to stop or even divert the normal growth and movements of culture. Again, if it ground too hard upon this tendency, there would be a fundamental upheaval, followed by military disintegration. Thus, though militarism is undesirable, in fact a survival of primitive tendencies, it never has been able to stem the spread of cultures to the extent of imposing its own total complex upon a conquered people. In the past, it has not infrequently happened that the subjects eventually imposed their culture upon their oppressors. One of the most notable examples is to be found in the history of China, for time after time a foreign military people imposed their rule over the Chinese only to succumb to Chinese culture.

Again, we have seen that though culture systems are said to rise and fall, or run in cycles, nothing really important seems to have been lost to the world. The centers of culture merely shifted or coalesced. What did most distinctly rise and fall was militarism. Its varying fortunes did affect the quantity and quality of cultural output, but at its fall some other virile center was always ready to snatch up the torch of light and dash forward. Further, militarism cannot live without conquest and plunder. An army must fight or go to pieces, and there must be plunder to offset the losses. When there are no more people to put to the sword, the parts of the machine will sooner or later fall upon each other. Then they will most likely break along the lines of their

minor culture differences. So those who seek to justify militarism on the ground that it will insure universal peace, should look deeper into the case, for the last struggle will find the power in the hands of a vast military establishment with nothing to do, and it is too much to expect that such a power will voluntarily abdicate; so ultimately strife and blood will come again, with dissolution into smaller units, only to begin the long tragic struggle all over again. Hence, we fail to see any ground for assuming that a worldwide triumph of militarism will bring peace or be in any sense a cultural advance, for history shows that the pursuit of the military ideal merely takes us round and round in the same old circular path.

CHAPTER X

CULTURE BUILDING

Our real interest in culture, as we now see it, centers on the way the group produces it. From one point of view this is a biological problem, but as we have so far made satisfactory progress by treating the objective data of cultures independently, we are encouraged to use the same procedure in interpreting the tribal culture as a resultant of the forces and factors involved. For the time, then, we shall not attempt to analyze the biological mechanism we call the tribal group, but assume that every tribal group produces a culture, conditioned by all the factors we have so far observed. We know that tribesmen will from time to time originate traits, so there will be at hand new materials for the structure. To these inventors the environment in turn offers many materials on the one hand and imposes, on the other, an array of problems, some of which must be solved, the penalty of failure in many cases being death. But rarely is the tribe alone in this struggle, for all about it are other tribes, upon whose experience it draws. Last, but not least, it has behind it a large sector of the experience of mankind, a priceless heritage of the ages. There are among us certain restive sensitive souls who delude themselves with the idea that this heritage hangs around our necks like the proverbial millstone and that every effort should be made to cast it off and so stand abolutely free. But that would not be a deliverance. One can imagine an artist making the sketch of a man, sloughing the outward integument of an anthropoid, his head and shoulders out,

and also his feet; but about the remainder of his body clinging the habiliments of the primitive. As an artist would put it, this is symbolic of the course of culture, the progress of the intelligence in its great handicap. So, to cast off our cultural inheritance, would be but to pull back up over our heads the hideous mask of the brute.

Anyway, it is not our problem to reconstruct the culture of the tribe from virgin protoplasm at a level of no culture, but to examine the culture processes as now functioning. The former would be a gigantic task and one for which we are yet unequipped, whereas the latter is susceptible of approach by direct methods. What we can best do is to see what happens when any one of the recognizable culture materials falls into the hands of a tribal group. These materials, to repeat, are the natural resources of the habitat, the spontaneous inventions of individuals, and the cultures of the surrounding peoples.

THE STORE OF NEW IDEAS

We often think of invention as a modern exceptional feat, something quite above the savage level; but we have seen how every trait of culture must rest upon an original production and so may assume such productivity to be universal. Every tribe, therefore, will be confronted with a varying amount of new suggestions, any or all of which are potential traits. Many students of culture origins greatly underestimate the quantity and quality of these products, for none, save field-workers who have come into close contact with modern primitives, realize to what extent these productive processes are functioning. The truth is that in each tribe are produced a wealth of suggestions, yet few of them ever get fertilized, as it were, and so develop into traits. Such an outcome is so rare indeed, that the diffusionists are disposed to allow each trait but one chance in the whole span of culture history. Nature seems to work here as elsewhere—for this is

indeed the work of nature and not something man has originated—by scattering broadcast countless thousands of seeds, that one may take root. This then is her way of planting the seeds of culture. But our problem is to discover what occasionally conditions events in the group, to the end that a trait is born.

Undoubtedly, this is one of the most fundamental problems we have so far faced and one that we shall revert to again and again in the succeeding chapters. At the outset, it is well to note our limitations, for here again we are seeking something that escapes direct observation. We see only the results. No one seems to have been able to look in upon the birth of a trait of culture, yet in modern times we often have reasonably full historical information on the end result of the successive steps and so can infer what are the essential features of the process. All of these have been well formulated by students of history and society, but often not in the terms of culture.

For one thing, new ideas that fail are said to be untimely. What is meant is that the idea in question does not readily fit into the culture complex of the group and in consequence, does not become a part of culture. It seems to matter not at all as to the merit of the new idea; it may be one of the basic conceptions of the next great advance in culture, and yet unless the tribal setting is favorable, humanity must wait. It seems strange indeed that there should be so much waste in the making of culture and the tribe be blind to the potentialities of its own best minds, or that man with all his power of thought should proceed by a kind of trial and error method in the working out of his own salvation. No doubt many times in the life history of each tribal culture comes a grand opportunity, which if seized upon with enthusiasm would make it the leader of the world. So it is that the tragedy of tragedies is the birth of a genius before his time. The pages of history contain a few

notable cases, the most interesting and instructive being that of Akhenaten, the Egyptian Pharaoh, who conceived of a monotheistic system, or the religion of the true God.[1] This he developed and sought to plant in Egyptian culture, the first great outstanding attempt to substitute for the old colorless polytheistic gods a highly spiritual religion, based upon one universal deity. He thus anticipated the Hebrews by eight hundred years. But he was doomed to disappointment; the culture of his people was incompatible; the proposed new trait-complex would not articulate with any part of Egyptian culture. One loves to linger over this fascinating story of a heroic undaunted soul, waving the torch of progress in abysmal darkness, and let us hope that in some more enlightened age, a fitting memorial will be inscribed to his memory. But what shall be said of his poor benighted tribesmen, immersed in a culture unable to utilize the riches offered it, for had they been ready, it is probable that the Holy Land of today would be the valley of the Nile.

This eloquent chapter from the most ancient of histories makes further comment almost unnecessary. Doubtless among many tribes other geniuses have appeared to cast their precious ideas upon barren soil and sink into oblivion, for there is every reason to believe that the phenomenon is universal, the way nature seeks her ends in matters of culture. But one may inquire as to what relations in the culture complex are responsible for such frightful mortalities of good ideas. Unfortunately this subject still awaits serious investigation. The familiar terms of conservatism, tradition, resistance to change, but serve to define the gross outlines of the phenomenon, and from what has gone before, we may hazard a guess that to survive, the new idea must be one that is closely related to some part of an existing complex.

[1] Breasted, *History of Egypt.*

Let us suppose that among one of the non-agricultural tribes of American Indians using wild rice as a food, a genius should conceive of planting the margins of lakes and streams and thus greatly increasing the acreage. This would but add a mere increment to a well established trait-complex and would, other things being equal, stand a good chance of survival. Anyway we do find in the data for wild rice culture, that such a trait was beginning to function in the nineteenth century. But this idea did not become a trait until by demonstration and repetition it entered into the rice complex. Our definition of a trait as an element of culture, requires that it rise above the individual level and become common practice or common knowledge, as the case requires. Then it is for psychology and sociology to trace out the intricate path that connects these two levels, and to evaluate the resistances to be overcome.[2] All we need do in our consideration of culture is to recognize that though the individuals in the group are steadily producing trait-materials, few of these even rise to the culture level. Upon the significance of this we shall comment again, but the importance of the selective power thus exercised by the mechanism of culture should not be minimized, for it goes far to determine what the culture of tomorrow will be.

So far we have given no consideration to the objects and forces surrounding the group. Obviously, the kinds of materials the habitat possesses, the natural resources as they are usually called, will bear a relation to the ideas that come into being. There is a problem as to the nature of this relation. Does the habitat, for instance, predetermine the ideas that will arise and so control the content of culture? This is a form of that vexing antithesis, culture and environment, which can best be dealt with

[2] See Woodworth, *Dynamic Psychology,* Chapter on Originality; consult also Baldwin, *Social and Ethical Interpretations in Mental Development,* p. 459 et seq. and Robinson, *Mind in the Making;* Knowlson, *Originality, a Popular Study of the Creative Mind.*

later on. At the present moment it matters little whether the materials offered by the environment determine what is invented and so control culture, or whether in some mysterious way the group molds the environment according to its will; for in either event, as observation shows, it is an invention that marks the beginning of a culture element. As stated elsewhere this is the basic phenomenon in culture.

TRIBAL LEADERSHIP IN CULTURE

Since the accidental is seen to play a rôle in the appearance of a trait and since our studies in distribution show that the traits constituting a type of culture tend to arise in a single center, it is necessary to account for these repetitions. If chance alone ruled we should expect a more even distribution within the area. So for this concentric distribution there can be but one explanation, the causes lie in factors peculiar to the group in question. Among individuals we expect that the man who makes one important invention will follow it with another, so in a tribe or a mere assemblage of individuals, we may expect an analogous condition. However, the analysis of such a manifestation of group superiority cannot be undertaken here, since the problem presented involves psychology, heredity, physiology, and human ecology. But one aspect of the case is strictly historical; it is conceivable that the foundations for many culture areas were laid by the first immigrants. When this group found itself in a new environment, among new foods, etc., it was stimulated to invention and so began to work out an order of life more in keeping with this new setting. Thus, the initial tribe in the area enjoys priority; it is ahead, and as we shall see later its culture is in a position to set the type. While here again we are short of good data, what we see in the distributions of known cultures suggests that one of the conditioning factors in a culture

area is the initial adjustment to the environment by the prior group. It is this initial solution that counts, and not necessarily the best solution.

Turning once again to the more objective aspects of culture and taking inventories of the trait content, it is apparent that even the initial invention within the tribal culture predisposes to that culture. In historic cultures this is usually spoken of as specialization, seen at its best in art and other equally immaterial complexes; not that the principle does not hold in material things, but because the environment often obscures the nature of the processes involved. Thus, if a group specialize in navigation of a specific type it is difficult properly to evaluate the part played by the external environment. On the other hand, when we find two culture groups, one of which has developed a high form of geometric decorative art, in contrast to another with an equally rich realistic art, the environment does not greatly trouble us. So far as geography is concerned, each group was free to turn to one or the other. Now, while we must speculate as to just how it came about that one was bent toward geometric art, it is fair to conclude that the nature of culture being what it is, the initial drift of art originality was so headed and that this was so because there was but one good idea at the bottom of it; perhaps the thought of a single individual. All the successive workers in the group but elaborated on the same model.

Our own culture is in no wise different in this respect. It is common to explain this phenomenon as due to the rarity of originality, but what is meant is that superior originality is rare, for originality in general is universal. Thus in reference to scientific men, it is said that he is great who chooses his problems the most wisely. Nor are they by any means the most difficult problems. Often in fact they are amazingly simple, but they are the problems whose solutions are of the most moment to culture.

Yet when they are announced they hold the attention of all and there follows a flood of elaborating and supplementing inventions in which there may be a wealth of originality, unacknowledged by the group, it is true. But the significant thing is that inventions in other directions are inhibited. It has been well said that in science we advance only by the discovery of new leads. Thus the discovery of radio-activity was a great event in the history of Euro-American culture, but we shall go on feverishly elaborating this trait-complex until it stagnates or breaks down by its own weight. Yet ere this, no doubt, some genius will come forward with a new lead and thus save the day for our culture. In brief then, every culture group, however primitive, tends to channel its own culture building, or to elaborate and reduplicate in building up its trait-complexes.

Anthropologists have come to regard this channelizing as *pattern phenomena*.[3] It is readily seen in the ceremonial complexes of many aboriginal American cultures, in which we observe a bewildering array of rituals, but which, when closely scrutinized, prove to be very much alike. For example, the Pawnee Indians have a large number of lengthy rituals, all of which are built around a fixed series of concepts symbolized by sacred objects: one can know in advance that the songs and procedures will be about the earth, vegetation, waters, seeds, fog, dew, rain, wind, and so on. Now, this can have but one meaning, viz., that at some point in the past history of the Pawnee tribe the initial ritual was invented, became a trait, and functioned as a new lead. Then, immediately other rituals were devised after the same pattern and successively elaborated. Another especially fine example of pattern phenomenon has been observed among the Blackfoot Indians where all ceremonies are fashioned according to a type of ritual based upon a concept of the

[3] Goldenweiser, *Early Civilization.*

transfer of supernatural power to human beings.[4] Here again it is safe to offer a similar explanation. The phenomenon in general we see to be universal, since it occurs in higher cultures as well as in lower, and is not so much a lack of true originality as has been naïvely assumed, but is due to the nature of the processes in culture. If it were otherwise, culture would not be what it is.

So far in this chapter we have dealt only with the culture materials produced within the group, whereas we have seen that inter-tribal borrowing is the prevailing process by which the content of culture is enriched. In addition to the new ideas, or potential traits, offered by its own constituents, the tribe has at hand the cultures of its neighbors. It is here, by seeing what a tribe does with what it borrows, that we get the clearest insight into the workings of the pattern. Returning again to the case of rituals, while there is no reason to believe that the Blackfoot borrowed from the Pawnee, they not being neighbors, it is clear that they did so indirectly or perhaps from the same source. Anyway, in each tribe we find similar ceremonial complexes worked over to conform to the respective tribal patterns. The histories of the horse and maize complexes, which we have chosen as types, also show this phenomenon in high relief; as when the Indian unhitched his dog and hooked up the horse, and the European farmer sowed his maize, instead of planting it in hills. In each case the tribe took from another culture what it found possible to recast. And so do we, day in and day out, meet all about us examples of borrowed traits refashioned according to our traditional patterns. Hence, this universal principle of culture building is one of the primary factors conditioning its development, and shows how secure may be the tribal culture

[4] For a clear presentation of these cases see Mrs. Benedict in the *American Anthropologist*, N. S. vol. 24, pp. 1–23.

whose priority of emigration, or merely of invention, enables it to set a pattern on new lines.

Yet the tribe at the center of the area need not depend upon its own originality exclusively, for due to its most favorable location, the new ideas of other tribes are at its command; these it needs but to lay hold of and adjust to one of its initial traits, thereby elaborating its own complexes and so passing out again a new increment of culture. Here we see the culture area in a new light, a restricted province in which, because of uniform environment, the fundamental problem is much the same for each tribe and to whose solution all make suggestions, from which the tribe in the most favored position draws and perfects the ideas that are to form the basic trait-complexes. The paths of diffusion once blazed are the lines of least resistance and this coupled with the prestige of priority insure the leadership of the tribes at the centers of cultures; but they are not the sole producers.

In general then, there is one specific aspect of pattern phenomenon that deserves attention here; the existence of a trait-complex pattern will exercise a kind of selective function in the face of diffusion. As we have stated elsewhere the new trait that is offered must find something to fit into, otherwise it may be repulsed. Thus, legal procedure in Euro-American culture is based upon Roman law, which seems to have been built up on a specific conception of the family, whereas Greek law was based upon the fraternity of the ruling class, or a gentleman's club. Here were two different trait-complex patterns, and though later on, Rome borrowed legal ideas and technique from Greece, she took only what she could recast to fit her own pattern. The sequence to this is seen when in the United States missionaries and teachers labored with the Indian problem; being not the least conscious of culture processes, they were chagrined at the indifference of the Indian to the ownership and conservation of prop-

erty and particularly to the idea of inheritance from father to son. In most cases the poor Indian could not see the point at all. The facts are that these well-intentioned missionaries, the advance agents to the diffusion of Euro-American culture, were not aware that they were seeking to spread a borrowed form of Roman law, slightly warped to fit the needs of their own once barbarous forefathers and that the Indian had quite a different form of jurisprudence into which this would in no wise fit. To introduce it, would be like throwing the proverbial monkey wrench into the legal machinery of the tribe.

Many other examples could be cited, particularly in the failure of Spanish culture traits to find a true setting in the Indian culture underlying many Latin American tribal groups. Hence, this peculiar type of inhibition can be formulated by stating, that each of the more fundamental trait-complex patterns in a culture will exercise a selective influence upon diffusion, for unless the new trait can be easily fitted into these existing patterns, it will be rejected. Remembering that in most cases no part of the procedure is understood by the people concerned, this working of the trait-pattern seems to be a part of a culture process as subtle and deep as the force of gravity itself.

PARALLELISM

One unavoidable annoyance in any extensive treatment of our subject is repetition. The same relations in data must be returned to again and again, because our objective is an understanding of culture as a whole, an extremely complicated affair, to be viewed, if at all, through its facets successively. So we return once more to the question of parallelism in the life histories of tribal cultures. We have been to some pains to show how, when an invention is made or an idea borrowed, as the case

may be, its fate depends upon what has happened before. In the same way we are forced to consider much that has been written and said about parallelism, though it were better, if it could be forgotten. Our discussion, then, is conditioned by the theories we have referred to in a number of places. The evolutionists in anthropology, that term being used in a specific sense, are regarded as standing for the view that the pattern for culture will fill itself out in much the same way even though the tribe is isolated. Or to put the matter in another way, if a tribe were turned loose in an environment, where materials in stone, copper, tin, zinc, gold, silver, and iron were at hand, then we should expect them to repeat the general steps observed, viz., stone tools, copper, bronzes, iron, and steel.

On the other hand, the single origin school, or the diffusionists, say that not only were each of these discoveries accidents, but that the sequence itself is fortuitous, and that never again could these things happen in just the same way.

With these antitheses we are now familiar, but find ourselves, at this point, much better equipped for their consideration. As they stand these propositions are artificial; that is, they presuppose a state of no culture, indeed, a dispersion of mankind before the birth of culture. This is contrary to our experience with the phenomenon, for a new tribal group is formed by the separation and union of parts thrown off by parent groups. So it is inevitable that these new swarms of humanity will take with them culture complexes covering the whole tribal pattern which will condition what each subsequently invents and borrows. Hence at no time since culture was established has it been possible to make a new start. Parallelism, in that sense, is out of the question.

If, however, we again take things as we find them, or in the naturalistic way, we see that, concretely, there are

only tribal cultures in the world, and that these have family stems standing out in more or less isolation. Thus, it came about that some groups of cultures all but lost contact with other cultures and so were doomed to borrow among themselves. This in-borrowing is what we see in a culture area. Now, here is a condition favorable to a kind of parallelism. It is, of course, understood that absolute discontinuity in diffusion cannot be proven, is not to be expected, in fact; yet there are observable degrees of isolation approaching this condition.

The example that comes readily to mind is the break between the land masses of the Old and New Worlds. This has long been the battle line of the diffusionists and their opponents, but we are now approaching the problem in a new way, and so may ignore the history of this quarrel. Turning to the observable facts, parallelism is suggested. Thus, certain cultures of the New World passed from stone to copper and then to bronze, though they did not reach iron. Also they began with simple suspended weaving, then progressed to the bar loom, to tapestry, and other Old World techniques. In the matter of writing they started apparently with pictures and eventually reached a stage where phonetic representation was attempted, but had not reached the alphabetic stage. In architecture they passed successively from shelters to houses, and then to temples. In military technique, to mass fighting with clubs, axes, slings, and swords, discarding bows. Astronomical observation resulted in a calendar system unlike anything in the Old World, but designed to serve the same needs. The zero as a mathematical conception is also claimed as appearing here. And so we might go on with a long list, but final note should be taken of the presence of city-states in Mexico and Peru. We have just enough historical data to show that this last was an outgrowth of cities and the archaeological data now at hand indicate a slow develop-

ment of the town and the city, based upon trade and conquest as in the Old World.

The single originists point to the above facts as proof of their contention, but so do the independent origin supporters. But do the facts as they stand prove either? Most certainly they do not. What they do prove, however, is that a state of parallelism exists, whatever may be the cause. It is conceivable that this parallelism may have been due to diffusion, but if so, each new trait must have been introduced at just the right time. Thus, in the case of copper and bronze, if transplanted from the Old World into the New, then the first colonists brought the use of copper and at a later date new colonists arrived with knowledge of bronze. Why no one followed to set up iron culture is not clear, and serves to bring to notice the weak point in the argument, for if in the case of each of a large number of traits successive colonists so timed their arrivals as to bring on the scene all the improvements in proper order, then they should not have forgotten iron. But there are no facts to support such an orgy of colonization in pre-Columbian times. Even the diffusionists claim that only a few storm-tossed ships reached the New World in ancient times. Yet obviously all these things cannot be accounted for by the arrival of a few stray sailors, though something may have come in that way as well as overland; but what we see are steps in a series that lead to similar ends—not identical steps, but analogous ones. In other words, we see the evidences of culture processes running their course by invention, convergence and diffusion, distorted in part by their own past, by the environment and by still unknown factors. But the environment in the New World was much the same as in the Old, so the stage was set for a replica of what went on at the other side of the globe. There is then a sense in which we find parallelism; history itself furnishes many examples of it, but now at last we see it

for what it is, an expression of the culture pattern and the consistent processes in tribal cultures. In the face of such evidence it would be preposterous to assert that approximate repetitions in culture could not occur.

Before leaving this subject incidental consideration may be given to a few conditions especially favorable to repetition in the development of cultures. As we have seen, similarity in the traits of two or more cultures does not guarantee their absolute identity. Parallelism is, therefore, to be understood as a general term. When it is stated in these pages that all culture complexes run through life cycles and so culture repeats itself, we are speaking in terms of patterns instead of culture content. It does not follow that two cultures will independently achieve such a thing as pottery glaze by precisely the same steps, or with the same materials. Someone has cited the case of vegetable fish poisons which occur among peoples in four widely separated parts of the world, each making use of different plants, handled and prepared in equally different ways. In each, therefore, this trait must have originated in a specific invention and so have been achieved in an original way. Yet, if one is not critical, and simply takes the facts that a vegetable substance is used to stupefy fish in so many parts of the world, an identity is suggested. What we do have is parallelism in procedures which converge to like results. So in the same way cultures repeat their life cycles, but not necessarily with identical content. It is always at this point that the argument for universal diffusion misleads one. Thus we can agree with the partisans of this theory that it is not to be expected that two cultures will run through their life cycle with the same absolute sequence of events, but they do tend to travel on the same type curve, and so more often than not strike the abscissa at about the same point. And it is always the end results that are declared similar, or identical, no one taking the trouble

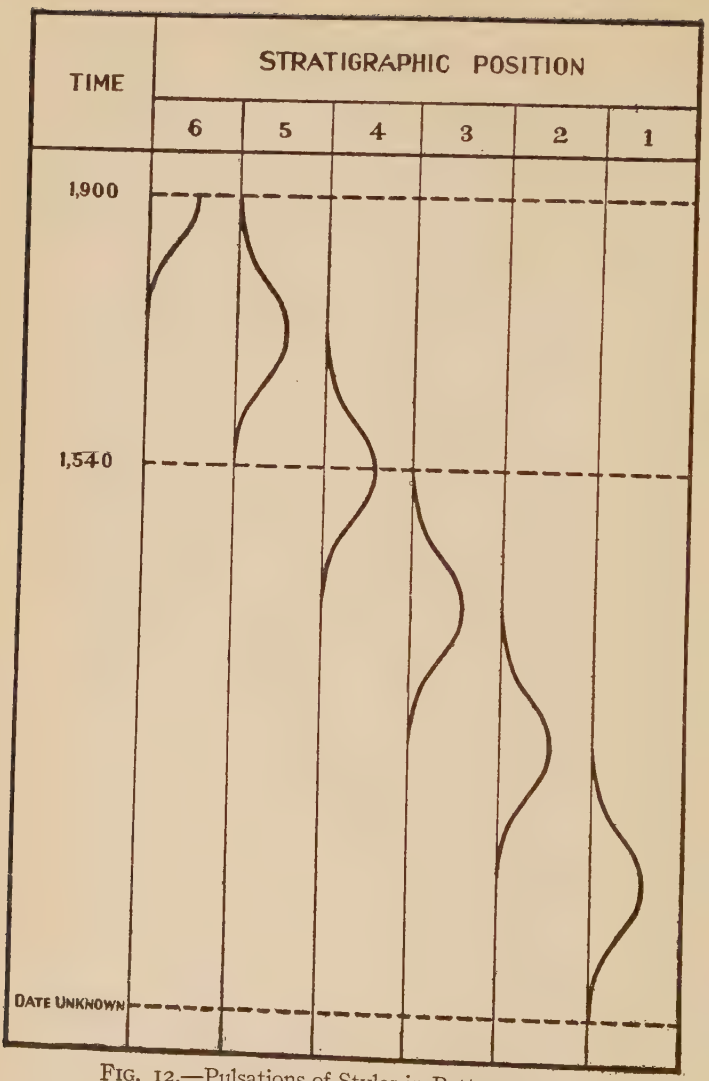


FIG. 12.—Pulsations of Styles in Pottery.

In Southwestern United States archaeologists have observed that in successive stratified deposits the fragments of each type of pottery are distributed around their respective average levels, approximating the frequency curves as shown. In visualizing the spacial relations of these curves, it should be understood that the horizontal dimensions of the drawing are schematic, for actually all the pottery fragments occur in a single vertical section; hence the frequency curves should be pushed to the left into column No. 6, thus overlapping.

to look behind the scenes to see how these ends were reached. So the fallacy in the argument lies in assuming that the great improbability of absolute repetition in invention excludes the possibility of arriving at the same end result in another way.

Another interesting aspect of certain classes of traits, is the way in which they pulsate. While, in general, man seems to hold on to whatever is of great usefulness, his interest does shift. In the chronology of ceramics, for example, we find at first a few random samples of a new style in decoration, which increase in numbers like the ordinates of a symmetrical curve, or the well known probability curve. But when the maximum is reached and the decline sets in, another new style appears gradually to displace the old (Fig. 12). In a sense, most traits run such a course if we regard the intensity of their functioning; that is, they appear first as stragglers to compete with existing traits, gradually displacing them at an accelerating rate until a kind of saturation results, when another straggler appears on the scene to repeat the process. For example, if a new style of stone ax were invented this would begin to take the place of the old style ax, slowly at first, then at gathering speed, until at last most axes were of this form. But one need not turn to the past for illustrations of this principle, for many are near at hand, such as changes in styles of clothing, or such shifts as that from bicycles to automobiles, or from phonographs to radio apparatus. Since each of these curves for trait development articulates with another, their spacial relations indicate positions in time; in fact one archaeologist has developed a method of dating ruins by equating the relative numbers of pottery fragments for each known style.[5] But we are now interested

[5] See Kroeber in the *American Anthropologist,* N. S. vol. 21, pp. 235–263. For more technical details read Nelson in the *American Anthropologist,* N. S. vol. 18, p. 159 seq.; Kidder, M. A. and

in the insight this gives into the working of culture, for just as the individual mind runs through a cycle of interests, so does a people or a culture. So also, the centers of originality burn themselves out and shift, but it is when they are approaching the crests of their respective curves, that the greatest diffusion takes place. Here again, we see another kind of parallelism that works toward similar ends and one which may at times contribute to the appearance of identity between tribal cultures.

ECONOMIC CYCLES

The net result of the preceding pages is an interpretation of what is sometimes spoken of as repetition in culture. A new trait starts, a pattern evolves, begins a process of elaboration which reaches its maximum, and then begins to disintegrate. Nowhere in history or anthropology do we see ground for assuming exceptions to this rule. The process is going on before our eyes today. Industrial organizations, for example, are elaborating their mechanisms, the number of material appliances is rapidly increasing, municipalities are multiplying their functions, etc. Obviously there is a limit to this, when Euro-American culture will become static, to be displaced by a rival, eventually. This is not necessarily pessimistic, for to so assert is no more than when speaking of men we say that all will die, sooner or later, it being in the nature of things that they should. So in reality, what we find in culture is one endless round of cycles.

Economic history is replete with tales of looting and despoliation, but it is against the unprotected natural resources of the earth that these raids are projected. We

A. V., in the *American Anthropologist*, N. S. vol. 19, pp. 235–263; and Spier, in *Anthropological Papers, American Museum of Natural History*, vol. 18, p. 207 seq.

have seen how a culture area might be characterized as an area of specialization, because the type of culture found therein was dominated by a few trait-complexes, and the most conspicuous of these is more often than not, a trait built upon and around some one food or other resource. Thus the Indian tribes of the great Canadian forest belt specialized in the hunting of the caribou, and as far as possible, they lived upon this one kind of game. This does not mean that they ate nothing else, but that the caribou was the chief food. Nor is it necessarily hunting peoples that so specialize, for in California the acorn was gathered to furnish the year's supply of bread, often the only food. Elsewhere it was noted that we ourselves show a like tendency to specialize, and we have all but exterminated the whale, the bison, the elk, the fish from our inland waters, and are now doing our best to finish up the forests. All this is an old story to the man of today, but it is not always clear just what is behind so much destruction. The nature of the phenomenon comes into closer view when we give our attention to the specific histories of the rise and fall of food complexes, or to the ecological problems of man. Such problems are best approached through the study of small isolated or insular areas. Islands are always interesting for they are little replicas of the world at large, readily seen as wholes, and one of the very best studies of such an area is a recent volume on the history of Euro-American culture on Long Island.[6] In the pages of this book one can follow the career of the white settler from the first, observe the order in which he exploited the resources of the island and the consequent economic shifts of his descendants. It is an appealing story, but we shall pass over the fortunes of the Long Island farmer, whose career is much like that of farmers on the mainland, and take a look at whale fishing. In aboriginal days the

[6] Gabriel, *The Evolution of Long Island.*

waters off the island were a favorite resort for the whale and so naturally enough some of the Islanders took to whaling. As time went on, they specialized more and more on the production of oil, finding a ready market for it on the mainland. This acceleration went on until in 1707 we are told that four thousand barrels of oil were turned out. Then something went wrong, for in 1718 we read that, "no more whales were to be seen off these shores."

Something like this happened with oysters. Oysters were eaten by the Indian and also by the early colonist, but about 1800 a great oyster bed was discovered off Blue Point, which was developed so assiduously that by 1824. it was fished out. Then new beds were sought and found, each of which was exploited more efficiently. Inventive genius took a hand, as always, and finally burst upon the scene with the dredge. For a brief period the fishermen enjoyed great returns, but alas all the oysters were soon scooped up. Yet genius again saved the day, after a fashion, by the invention of oyster farming; and so it was with many other activities of the islander, for an account of which the reader is referred to the work just cited.

These facts eloquently set forth the reaction of man to the resources of his habitat. Someone discovers a new use for a fish, a tree, or a mineral, and straightway the group fixes its attention upon it and perfects a technique; then a genius again appears with a far more effective technique and so the war of man upon nature goes merrily on until the final *coup* is struck. Then comes a sudden collapse and a readjustment. All this and vastly more is shown in the history of this island, a true cross-section of culture processes at work.

However, the assertion is often made that this exploitation of the environment is a unique thing in the world, that it is only modern man who goes about destroying

nature in this way. This is a mistaken notion. It is only because the data on the past are not at hand in equal abundance that this is taken as an innovation, for while such clear-cut examples as the above cannot be cited, there are not wanting signs of prehistoric depredations. Thus Chinese jade has become an antique, presumably because the whole supply was quarried out in ancient times. There are also indications of extensive copper mines in ancient Armenia, but only worthless ore can be found there now. The fine steel of old is said to have been from a large meteoric fall in Asia Minor, long ago used up. Concerning raids upon the faunas we are less certain, but the extinction of the ancestor to the sheep and the ox is not to be ascribed to mere accident, for domestication itself stands as a monumental effort on the part of man to save what were once abundant as game. The notion sometimes found in books that man tamed the ox because he was tired of trundling the cart is too naïve to be considered. The yoke was an afterthought, for man's first concern was the perpetuation of his beef supply. Everyone takes an equally naïve view when explaining agriculture, that is, they look upon man as a shirker, seeking the easy life. They may be right, but it is far more likely that domestication and agriculture were born in times of dire necessity, when the whole tribe was confronted with a vanishing fauna or flora. The modern invention of oyster farming, we have just cited, is a case in point.

Another thing not usually considered is that everywhere a state of culture greatly disturbs the equilibrium of nature. Even deforestation is not a new thing. A common form, or pattern, of the farming complex among the more primitive, fully described by a number of writers,[7] clears the fields by burning off the vegetation. This, of itself, would not be fatal to the forests, if the

[7] See Cook, Publication 2601, *Smithsonian Report for 1919*, pp. 307–326.

process stopped there; but in the course of a few seasons the weeds have invaded the plot. So to meet this difficulty the primitive farmer abandons the old and burns off a new plot. This process goes on year after year until whole areas are denuded of trees; but that is not all, for as the population increases fields are run in cycles, thus preventing reforestation. As traces of this method have been met with in many parts of the world, it raises the question as to whether this was not the universal way whereby early agriculturalists cleared their lands. If so, and if it is true that deforestation changes climate and reduces whole regions to deserts, as some maintain, then it may well be that many of the centers of older civilization were once well watered and wooded, and thus offered their hospitality to the youthful human race, only to be ungratefully and ruthlessly devastated.[8] Yet research in this line is not even in its infancy, for we have only its germs; but it is clear that when it once gets underway, we shall understand many things that now greatly puzzle the wisest. We can but guess how many times in the dawn of civilization well ordered cultures over-reached the natural resources upon which they were grounded and for want of the necessary genius to solve the problems thus posed, faded into oblivion.

Under another head we have reviewed the evidence for the shifting of culture centers. No doubt many causes outside of culture enter into these results, but on the other hand we see in the nature of the processes so far defined sufficient cause for such events. For one thing the increasing efficiency of a food complex will sooner or later bring about a state of "diminishing returns" and thus upset the equilibrium of the whole. No doubt a few of the specially favored regions have made it possible for man to maintain the balance for a long time, and it has been suggested that the valley of the Nile was such

[8] Huntington, *Climate and Civilization.*

a paradise, where each year the kindly disposed river would bring down a fresh, rich coating for the fields. This man could not stop, if he would, for the supply was well nigh inexhaustible, and up to a certain level his increasing technique brought ever and ever greater return with no danger of sudden collapse. It is not strange, therefore, that Egyptian culture ran through a cycle of thousands upon thousands of years. Yet it paid the universal penalty for being rich, since all the wilder, virile fighting folk preyed upon and over-ran it with their military systems, eventually toppling over the best parts of the whole structure.

But, in the world at large, outside of a few such favored spots, there was a more even chance. By the time one center of culture over-reached itself, some neighboring culture discovered a new natural resource to exploit and upon which to grow rich and powerful. We have described the observed shifting of culture centers under another head, as guaranteeing the continuity of culture as a whole, but offered no explanation of what was taking place behind the scenes. Historians are fond of stating that political corruption is the cause of these shifts, seldom looking beyond the political complexes, and so far they may be right, but usually the more subtle culture processes that are consuming the sustaining resources, elude them. In most cases even the geniuses of the time were wholly oblivious to this aspect of their national lives. If there is a moral to all this, it is more and more objective inductive research into the facts of culture, that we may the more fully comprehend our own.

It may, however, be worth while to sketch once more the phenomenon of shifting centers, even at the risk of some repetition, for we are each time viewing the phenomenon from a different angle. In the case of Crete, we are told that when the decline really reached its climax, Greece was well on the way to leadership; and

again, when Greece went down, Rome was rising. In other words, the center, or the most typical culture merely shifts its location, not unlike the passing of life's activities from father to son. The chronologies of these three nationalities overlap so that they were in part contemporaneous, for when Crete was the center of the European area, Greece was one of the less typical groups, and likewise when the center shifted to Greece, Rome was one of the less typical. But while undoubtedly the causes contributing to this were complex, it is well to note that these new centers were springing up in a more or less virgin place, which means that unexploited resources were at their command.

But we need not confine ourselves to historic peoples for illustrations of such shifts. Primitive cultures show them also. When the New World was discovered, there were two large nationalities here, the Inca of Peru and the Aztec of Mexico. The Inca ascendency in Peru was then about at its zenith, and we have at hand data to show there had been three other successive centers within the lands of Peru and that the sway of the Inca was the last shift of the type.[9] As to Mexico, while Cortez found the Aztec City of Mexico to be the center of culture, we know that long before this the center had been in Yucatan, the home of the Maya. Mexico City had also a close rival in Mitla, the capital of the Zapotecs, State of Oaxaca, if indeed, she did not at one time rise to the highest type. Anyway, the civilization of the Maya rose and declined, as the Aztec came into leadership.[10]

For the more primitive culture types, we have even less data, but that the same conditions will be met is suggested by recent investigations in Southwestern United States. Most everyone knows that here we still have interesting groups of Indians living in pueblos, like

[9] Markham, *The Incas of Peru.*
[10] Joyce, *Mexican Archaeology.*

the Zuñi, Hopi, etc., and that the country round about is full of ruins of former pueblos. Students of the subject know also that, while since the coming of the white men the center for this culture has been in the villages of New Mexico on the Upper Rio Grande, it is showing a tendency to shift to Zuñi or Hopi, and further, that in former times the center was successively at three different places in the area. We can go even further, for there is reason to believe that in the very northern bounds of the area, in southern Utah or Colorado, there was a still older center, or metropolis, of this culture. At this old center there was no pottery, very little agriculture, and no architecture, but still we find there many fundamental elements of the later pueblo culture. Then as we shift our center in chronological sequence, in come pottery and other definite pueblo traits.[11]

There is not the least reason to doubt but that, if we generalize this procedure, we shall have the essential scheme for the development of every primitive culture area. Its population we shall find segregated under a number of tribal governments, each of which is passing through a life cycle, not necessarily at the same rate, but nevertheless passing along the same kind of a curve. Now one or two are the leaders in culture, but soon they fall, or are pushed aside by one of the less typical, which again sets the type. And from what precedes, we may suspect that one of the prime causes that contributes to this result is the economic cycle. At least, here is a promising field for the investigator.

THE STIGMA OF IMITATION

That imitation plays a big rôle in human society is a truism today; even theories of society have been founded

[11] Kidder, M. A. and A. V. in the *American Anthropologist,* N. S. vol. 19, pp. 325–360; Morris in *Proceedings of the National Academy,* vol. 7, pp. 18–22; Nelson in the *American Anthropologist,* N. S. vol. 18, pp. 159–180.

upon this one factor. The part it plays in diffusion has been noted. Fundamentally, it is a natural process, inherent in man, but it also may be rationalized as in deliberate copying, or borrowing. In any case, the modern world is disposed to look upon the process with suspicion. Thus in America we place a high value upon originality and in consequence hold in contempt those we believe to be imitators. It is this spirit that prompts us to sneer at the achievements of the Japanese and stigmatize them as imitators. One will say, this is all well enough, but these people are merely showing unusual skill in imitating the accomplishments of others; they have shown no evidence of an ability to produce, or to take the lead in new inventions. This is not the place to discuss the relative originality of the Japanese, for a few years more will show what they can do in this line, but we must not forget that we also are largely imitators. Further, as we have just seen, the prevailing mode of acquiring culture has always been to imitate the traits of other peoples. It is nature's economy, for if each people were forced to work out all phases of their culture alone, no one can guess at the ages that must ensue before anything like the present cultural state of the world could be attained. The five hundred thousand years scientists now assume as the approximate age of culture would need to be multiplied many times to give the minimum period requisite to the production of modern culture. In fact, without the imitative function it is difficult to imagine how man could have a culture at all, for it must be perpetuated by the imitation of the older by the younger members of the group.

There may be, as we have hinted, differences among peoples as to the degrees of inventiveness, but all can and do invent. It is no stigma for the Japanese to imitate Americans in some traits of culture, for that is the one human way to enrich a culture, and as Americans, we

should not be so sure that we can invent everything that is worth while, but should keep thoroughly informed as to the cultures of all other peoples and above all rationalize the use of this knowledge in the enrichment of our own culture. To pursue any other course will eventually crowd us into an extra marginal position in culture. We may be a mite superior in inventiveness (no one knows), but that will not save us, for the total facts of culture indicate that we are by no means unique and so have no grounds for assuming that our career will be different from those of other cultures, unless we proceed systematically to make it so. One of the most distinctive concepts in Euro-American culture is the idea of rationalizing one's inventiveness, first promulgated by Roger Bacon in 1605, who is an example of a genius born before his time. But the ideas he heralded were later championed by his namesake, Francis Bacon.[12] We often hear that the famous old Greek, Aristotle, was the founder of experimental science, but he never seems to have reached the point where he saw that man's life activities could be guided and his culture enriched by socially directed investigation. Further, Aristotle never turned his back upon the philosophical methods of the great philosophers of his time, but Francis Bacon did, and put his entire faith in experiment. He wrote out a plan for an ideal culture which was to be directed by an association of investigators, or scientists, whose sole function should be to advance culture and so the well-being of the whole people. In other words, he looked forward to a time when his people should become conscious of themselves as having a culture and then proceed to develop it on rational lines. But as the idea was opposed to the traditions of Bacon's time, it took about three hundred years for it to demonstrate its right to a trial.

[12] Welsh, *Development of English Literature and Language;* also, Robinson's, *The New History.*

This is a typical case of culture making. No matter whether the culture be primitive or modern, simple or complex, it is modified by inventive genius and it is the getting of the idea that is essential. But the men who get the ideas are after all the men who know. Out of the very richness of their knowledge these rare ideas are born; but in every case we find that these exceptional men know the corresponding facts of many contemporary cultures and by comparison of these arrive at epoch-making ideas. They also are imitators to the extent that they acquire all these elements of culture. However, we must not unduly exaggerate the part of the original inventive genius, for it takes a favorable culture setting and the effectiveness of culture leadership to put ideas into function. Nevertheless, the genius is the initial event in the series. It begins with him.

To this phase of the subject we shall return later; its significance here is that if we look upon culture as a whole, embracing all peoples, whether they have histories or only anthropologies, the borrowing and re-borrowing of traits is the rule, and in consequence imitation is a phase of the process. Yet imitation may be naïve and natural, as well as deliberate and conscious. Thus time and again we have stated that cultures ignored the boundaries to states and tribal governments, but now we are in a position to say how this is done. The cause lies in the suggestiveness inherent in mankind. Man everywhere takes the liveliest interest in the acts of his fellowmen. Yet, these acts must not be wholly different from his own, for if the disparity is too great the observation of them merely excites his disgust; but we can safely take as a principle of culture acquisition, the rule that when man sees his fellowmen performing the same acts as himself, but using a different method, his interest is aroused. Then without much thought he may proceed to imitate the stranger and the chances are that, if the results are satis-

factory, he adopts the new way. This inherent disposition in primitive man will account for the similarities of culture in a geographical area occupied by many separate tribes. Even though two tribes were perpetually hostile, this process would go on, for everywhere it was customary to take women captives and occasionally men. These captives are certain to introduce some of their culture to their captors. And we must not overlook tribal rivalry, for when one tribe comes to feel that another is superior, or is about to become superior, that feeling is a stimulus to study and imitate the acts of the other. This also can go on quite naïvely and without social-consciousness.

As the case stands then, all that needs to be done is to give men knowledge of culture traits that seem desirable and they will absorb some of them without any kind of social effort or systematic procedure. In fact, it is clear that they might go on doing it in spite of governmental authority, for the movement would be insidious and not self-willed. If it is an idea that is being imitated, then it is rare that governmental power is strong enough to blot it out entirely, for the history of martyrs shows how futile the most drastic punishments are in the suppression of new ideas.

On the other hand, we have cultures like our own in which there is definite social consciousness of all these movements and in which the imitative assimilation of foreign culture traits is systematized. Japan is a notable example of what can be accomplished by organized systematic imitation of an advanced culture. The older culture of Japan was marginal to the Asiatic center and also, by geographical position, marginal to America. History makes it clear that it was contact with America that initiated this movement on the part of Japan. At least, a portion of her population set themselves the task of acquiring the most objective traits of this new culture,

because they recognized their superiority. The rapidity and thoroughness with which they assimilated many of these traits still excite our wonder. Japan's example is being followed by China, though to a less degree, thus threatening to make China also marginal to our culture type. Japan gained speed by her rational procedure, but the mere logic of the situation would have accomplished the same end in time, for little by little, the knowledge and desirability of the new culture would have found root. So the great lesson Japan has taught is that, if a people will but awaken to the fact that all the desirable elements of an established culture can be quickly acquired by merely setting at it systematically, and act upon that principle, their destiny is assured.

All this makes our way plain. We must first of all keep thoroughly informed as to what the other peoples of the world are doing; that is, we must study their cultures. If we find traits that are truly better than ours, let us make them our own. In doing this we are not sacrificing our individuality, we are merely taking advantage of what the environment offers. We are not throwing away our culture, we are simply building in new and better parts to the same old whole.

BIBLIOGRAPHY

BALDWIN, JAMES MARK. *Social and Ethical Interpretations in Mental Development.* A Study in Social Psychology. Fourth Edition. New York, 1906.

BENEDICT, RUTH FULTON. *The Vision in Plains Culture* (*American Anthropologist,* N. S., vol. 24, pp. 1–23, 1922).

BREASTED, JAMES HENRY. *A History of Egypt from the Earliest Times to the Persian Conquest.* New York, 1905.

COOK, O. F. *Milpa Agriculture.* A Primitive Tropical System (Publication 2601, Smithsonian Report for 1919, pp. 302–326, Washington, 1921).

HUNTINGTON, ELLSWORTH. *Civilization and Climate.* New Haven, 1915.

JOYCE, T. A. *Mexican Archaeology.* An Introduction to the Archaeology of the Mexican and Maya Civilizations of pre-Spanish America. New York and London, 1914.

KIDDER, M. A. and A. V. *Notes on the Pottery of Pecos* (*American Anthropologist,* N. S. vol. 19, pp. 325–369, 1917).

KNOWLSON, T. SHARPER. *Originality, a Popular Study of the Creative Mind.* Philadelphia and London, 1918.

KROEBER, A. L. *On the Principle of Order in Civilization as Exemplified by Changes of Fashion* (*American Anthropologist,* N. S. vol. 21, pp. 235–263, 1919).

MARKHAM, SIR CLEMENTS R. *The Incas of Peru.* New York, 1910.

MORRIS, EARL H. *Chronology of the San Juan Area* (*Proceedings, National Academy of Sciences,* vol. 7, pp. 18–22, 1921).

NELSON, N. C. *Chronology of the Tano Ruins, New Mexico* (*American Anthropologist,* N. S. vol. 18, pp. 159–180, 1916).

ROBINSON, JAMES HARVEY. *The New History.* Essays illustrating the Modern Historical Outlook. New York, 1912.

The Mind in the Making. The Relation of Intelligence to Social Reform. New York, 1921.

SPIER, LESLIE. *An Outline for a Chronology of Zuñi Ruins* (*Anthropological Papers, American Museum of Natural History,* vol. 18, pp. 207–331, 1917).

WELSH, ALFRED H. *Development of English Literature and Language.* Chicago, 1886.

CHAPTER XI

THE GENESIS OF CULTURE

Tribal cultures have life cycles, like individuals of a species. They spring from parent cultures, grow, mature, beget other cultures, decline and eventually die. And just as the germ plasm is the stream of continuity that makes the species relatively immortal and an individual is the organic outcome of what a particular cluster of that plasm did in a specific environment, so we may suspect that the continuity and unity of culture is based upon some analogous relation in the phenomena and that any specific culture we may discover is the outcome of labor on the part of this yet unknown complex. By analysis, and even brutal dissection, we have laid bare the mechanisms of culture and revealed some of her secrets, but our fate is the universal one in such endeavors, where each advance but reveals new problems in ever-increasing numbers, and we have yet to discover what it is that works behind the scenes to insure the continuity of culture. Perhaps we shall never know, just as is still withheld from our understanding the inner nature of the germ plasm. There is, however, a more immediate problem in the observed evolution of cultures. The stumbling blocks in the study of organic evolution are its fragmentary record and its inertness, for so far as we can see species after species now go on and on without important modifications. Culture, too, is elusive and slow at times, but again, can move with celerity; as a demonstrator of evolution she has vastly more to offer than zoology, for at the present moment all the cultures in the world are evolving, none are stable, and to him

who yearns for a closer acquaintance with the methods of nature, culture offers immediate returns.

So far in this discussion we have not dealt with culture synthetically, but rather with its specific individual types. Our next task, therefore, is to reconstruct, as satisfactorily as may be, the course of culture from its beginning. This will be no mere holiday affair, for the problem is beset with difficulties that may well fill one with dismay. Nor can we in a pioneer work of this kind hope to go far with it. At best we can do little more than formulate the problem.

CHRONOLOGY

The great triumph in culture research will come when a worldwide chronology is attained, a time-sequence scheme that is workable and verifiable. True, there have been attempts, rough outlines of the evolution of culture have been sketched, but these are for the most part guesses; they can never serve as foundations for genetic interpretations. Yet the problems involved are, for the most part, just as objective as those of geology, and equally immune to all onslaughts except by the most refined technique. If, as has been said many times, science is the experimental and inductive determination of the hidden relations between things, then the true archaeologist deserves to sit among the great; for by infinite patience, amid a bewildering maze of details, he proceeds step by step to the discovery of time-relations in the fragmentary débris of some one long-lost culture, strong in the faith that even though his span of life but suffice for this single task, infinitesimal as it is, he will still not have lived in vain, since eventually one such increment after the other will fit into one unifying sequence. To date, the sum-total of these precious labors is small indeed and yet the insight they give into the evolution of culture is the most inspiring chapter in the book of science. Al-

ready we begin to see, as from afar, the dim outlines of culture's evolution; and while it may be presumptuous for us, standing as we do with the early pioneers in this research, to attempt to fill in the sketch, yet even that may be excusable, if it but spur us to greater achievements.

Of all places where archaeological research has been pursued, western Europe has been the most fruitful, partly, no doubt, because in proportion to the area to be covered, the workers have been the most numerous and the most persistent.[1] In France and Denmark there has been brought to light a long sequence of cultures, that eventually ties into the historic. In southern Europe an equal stage of completeness has not been reached, nor is this to be expected, since there the logical place to begin has been on the borderland between history and prehistory. Yet the work in the island of Crete has revealed what promises to be a full sequence through palaeolithic and neolithic levels.

Leaving Europe one naturally turns to Egypt. Here one meets another great triumph of the inductive method, and, though again it is the immediate prehistoric that has been emphasized, the work has gone far enough to reveal deep underlying stone age cultures. Since the adjacent old culture centers of the Near East are closely correlated with Egypt, and, so far as their chronologies are interpreted in its terms, they may be included. As little is known of the remainder of the Old World, we may conclude this inventory with the statement that, we have in our hands several sections of the evolution of culture around and adjacent to the Mediterranean Sea, which we can fit together, not yet absolutely, but still with confidence that what we see are the main outlines.

[1] For time sequence tables see Osborn, *Men of the Old Stone Age;* Elliot, *Prehistoric Man and his Story;* Grant, *The Passing of the Great Race.*

In America, too, archaeologists have not been unmindful of their responsibilities, but the field is vast and the workers relatively few. So far, no single locality has been thoroughly worked out, but something has been attained nevertheless. Almost everywhere it is possible to approach the time-sequence problem as in Egypt and Greece, by working backward from the historic. Historic here, however, means 1492 and after. Above all, interest has centered upon Yucatan, the Egypt of America, as someone has said, where once flourished, long before the coming of the Spaniards, a culture now known as the Maya, among whose ruins we find inscriptions, some of which can be read, especially the dates, which by means of the later Aztec as a key, can be correlated with our own calendar, to within a few days. This accuracy is astounding, for in no case is it possible to deal with Egyptian time in this precise way. The earliest dated monument so far described in the Maya area is about 200 B.C., and though it is known that earlier remains underlie these, they have not yet been made the objective of stratigraphic research. In much the same way, but with far less success, it has been shown that the Inca of Peru and the Aztec of Mexico have behind them a long series of culture horizons. The other locality in which advance is being made is in Southwestern United States, among the Cliff Dwellers and the pueblos. Here are concentrated the resources of many research institutions, which specialization seems about to be justified, for step by step, from the historic backward, has been traced an evolution of cultures that began with simple hunters, ignorant even of the bow.

Elsewhere in shell-heaps, village sites, mounds and caves, have come to light tiny fragments of stratified débris, which cannot as yet be fitted together. So we are permitted but a glimpse of what is hidden in the strata of the New World, but even fleeting and uncertain as

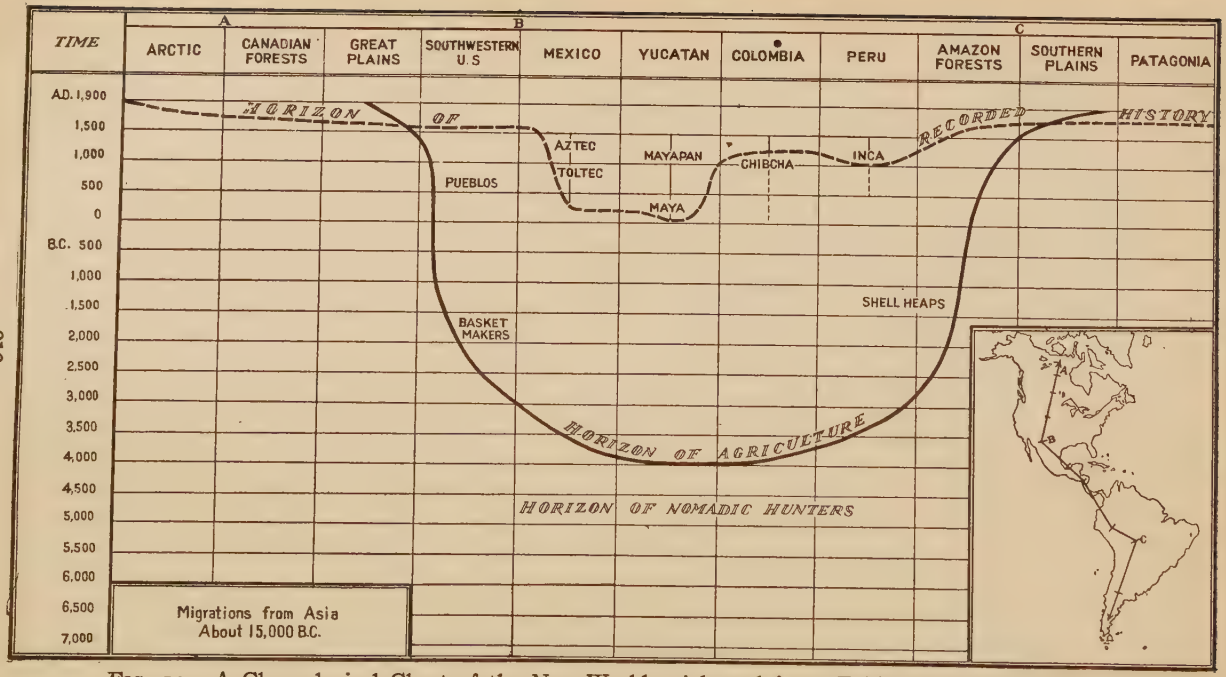


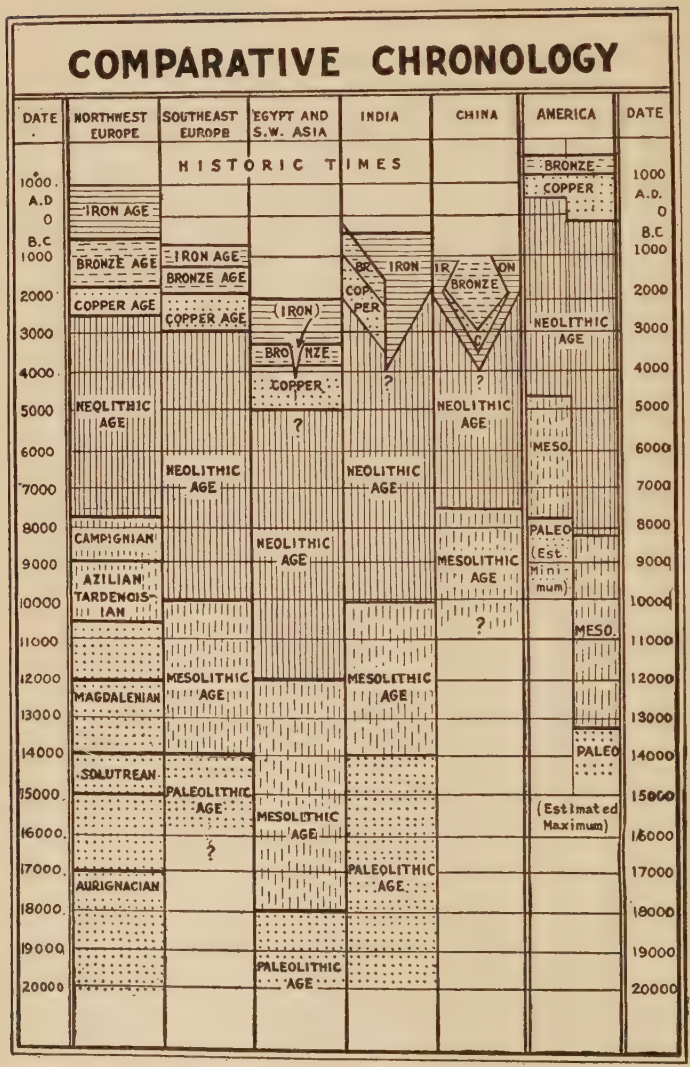
FIG. 13.—A Chronological Chart of the New World. Adapted from Table of Dr. H. J. Spinden.

this is, the outline of the whole is discernible. Anyway, one brilliant student of the subject has ventured to interpret it.[2] (See Fig. 13.)

We seek, however, a view of culture as a whole, and so it will not suffice to have before us two time charts, one for the Old World and another for the New; they must be put together. Fortunately, one of our great archaeologists has compiled such a correlation as shown in the table.[3] The first thing to strike one here is the late date at which copper and bronze appear in the New World, for whereas copper was known in Egypt before 5000 B.C., there is no evidence for its use in America until the beginning of the Christian Era; naturally we find bronze to be later still. But copper does not appear in Western Europe until 2000 B.C. However, it is not quite correct to compare the whole of the New World with the different areas of the Old, for instead of a single column in the table for the two Americas, we should have at least three columns, as Middle America, the United States and Canada, Eastern and Southern South America, or as in Fig. 13. We can, however, compare the Old World section of the table with Fig. 13, whence it appears that the times for the appearance of copper vary not at random, but around two centers, one in Egypt and one in Middle America; but the difference in time between the two is about 5000 years. It is also observable that the Stone Ages of the two hemispheres follow in about the same order of sequence. Unfortunately, the table to which we refer (p. 218) is based upon stone and metal implements only, for these relatively imperishable objects are almost the sole criteria upon which our present world chronology is based. Yet, from what has gone before we feel safe in assuming that, were we able

[2] See Spinden, *Ancient Civilizations of Mexico and Central America.*

[3] Nelson in the *Proceedings of the Second International Congress of Eugenics.*



By Courtesy of the American Museum of Natural History. Compiled by N. C. Nelson.

to treat other trait-complexes in the same fashion, we should find them closely conforming to this scheme. Hence, it would be possible to construct a broad synthetic scheme for the Old World comparable to that which American anthropologists have given us for the New (Fig. 14).

So bearing in mind that our data are extremely fragmentary and that the lines in our tables and diagrams are quite provisional, we can nevertheless feel certain that they show what the final picture will be like. Thus, some one area will claim priority in the polishing of stone, another in the domestication of a plant, still another in the use of copper, etc. Whether this priority will in the majority of cases fall to cultures in the same area cannot be foreseen, but from what we have observed the chances favor such repetition when the discoveries are relatively synchronous. Thus, the significance of the vertical intervals in the tables should not be overlooked, for the headings are geographical and not cultural; and, since specific cultures come and go, it is to be understood that priority can be claimed for a small section of the column only. If in the end, we should find that the Valley of the Nile held the most priority counts, then one must suspect the environment or blood, or both, to be responsible. But this is not what we see, for though up to a certain point priority may be in evidence, even through many successive cultures, there comes a time when the Valley of the Nile, for instance, can make no claim to prority in anything of world importance. Again there was a time when a culture, or perhaps a succession of cultures in Eastern Asia made such contributions as silk, tea, paper, gunpowder, the compass, block-printing, folding fans, umbrellas, wheelbarrows, and a long list of other complexes now worldwide; but again there came a time when no priority could be claimed. So one might pass from example to example, if there were need; but

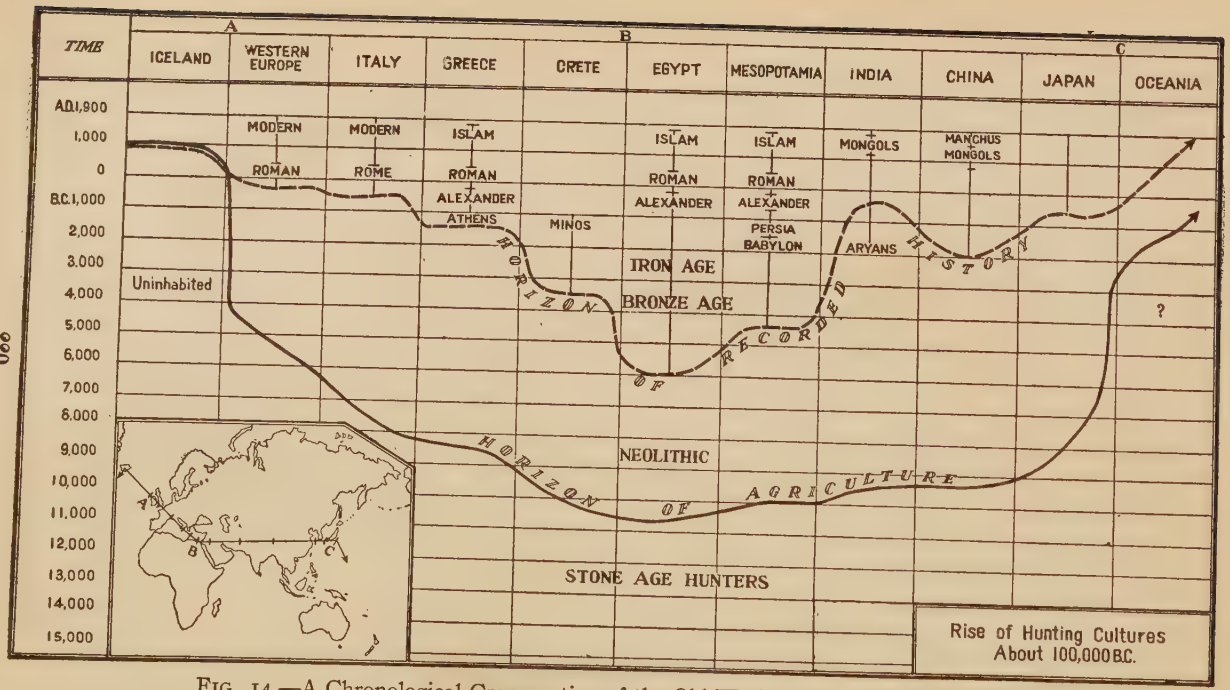


FIG. 14.—A Chronological Cross-section of the Old World. Suggested by Fig. 13.

there is not, our early analysis having brought to view certain universal principles according to which we should expect just this result. What we see then, in this world view is, that while a single geographical area may for a time hold priority successively in the great achievements in culture, it does so but for a period, to be outstripped in turn by another.

But this is only part of the picture. What still remains, the one outstanding fact, is that similar trait-complexes appear at later intervals in many of the columns in the table. Here we see possibilities for diffusion and also for independent origin, both of which may be expected to operate. If we found, for example, that priority did not shift its locus, then diffusion would be the best bet, for the whole of the world would be one unified distribution area, with one center, and then the Valley of the Nile, or somewhere else, would be in reality the motherland to culture. But it does shift, and the fact that it does so indicates that a new burst of inventiveness is on. So in final answer to the question, "Can similar inventions occur twice in this scheme independently?" we shall say, "Yes." We have seen how unlikely it is that a well developed complex dropped into a strange tribal culture, will take root and survive. Suppose that tie-dyeing, loom weaving, bronze casting, writing, the zero, the solar year, etc., were dropped from the Old World into a tribal hunting culture in the New World, what chance would they have of survival? Yet, they were in Peru and Mexico before 1492. The time of their appearances here is, so far as the data go, not earlier than 1000 B.C. Colonization and militarism could have anchored them here, but it is difficult to see how the marks of conquest could be so well effaced. In short, all that we have so far developed in the analysis of culture, reveals the fundamental place of invention in the individual, as the source from which come the germs of

culture, and it is only when these fall into a favorable medium that they survive to grow into new culture elements. Nor is it to be wondered at, if a status of similarity in one trait is reached, that from the multiplicity of trait-germs swarming about, by mere mechanical selection, a twin should result. Thus, sooner or later, somewhere, a copper complex may be expected to mother a bronze complex. We must then expect some repetitions, partial and complete, in different time strata, for both diffusion and invention are working hand in hand.

Turning now to the chronology of culture as a whole, we may ask what is expressed thereby. Are the sequences merely fortuitous happenings, or does the whole series of events from the earliest stone age to the twentieth century A.D. represent a single process? Literally speaking, a chronology is neither of these, but a time table for a few trait-complexes. What is revealed is that the use of stone as tool material was develôped, and the forms and processes were then elaborated and multiplied. It is the sequences thereof that archaeologists are able to discover. Later, we find that new materials for tools are substituted and so the process continues. In so far then as chronology expresses genesis, it is the genesis of specific trait-complexes that is revealed. This does not mean that the facts of chronology are unimportant, quite the contrary. What we see are evidences that most culture traits have similar chronological sequences; that is, they are elaborations, with occasional substitutions of new materials, or processes, for old. Such, then, is the genesis of the trait-complexes that make up the content of culture; further, it is the facts of such elaboration of traits that constitute the history of culture and which anthropologists are fond of explaining by what they call historical methods. On the other hand, the pattern of the phenomenon does not show changes, or shifts, by which it can be dated and so

presents us with a different kind of problem. To this problem we now turn.

ANTIQUITY OF THE CULTURE PATTERN

The important characteristics of culture being taken as continuity, or the quality of accumulating experience in its own mechanism, independent of individual experience; the life cycle of each specific culture making possible the repetition of trait-complex evolution; its grounding upon the universal phenomenon of invention; its content of trait-complexes, for the most part accidentally associated, but still within limits set by the pattern; and the universal readiness of its trait-complexes to diffuse outward in all directions; we find ourselves facing a deeper problem, for the universal pattern of cultures, like a new kind of germ-plasm, fastens its inherent form upon each infant culture. Where then did this pattern arise? Or rather, since we are still dealing with culture alone, in what form does it first appear?

Turning to our chronological tables again, it appears that no one has yet ventured to say what kind of pattern the first culture had. The difficulties to be surmounted are obvious. For one thing, it is only the most indestructible débris of cultures that survive. In the first place, it is now taken as a matter of course that for iron, bronze, and early neolithic cultures, the universal pattern holds; their intimate relations to historical cultures and the richness of archaeological data concerning them, makes any other interpretation impossible. Further, in what are known as Upper Palaeolithic cultures, beginning with the Aurignacian, we meet with a surprising quality of painting and sculpture, accompanied by many evidences of great technological skill in the making of tools and weapons. So no one can doubt that these are the débris of cultures much like those of historic times. Indeed, as one gazes at the reproductions of their cave

paintings, their sculpture, their lamps, paint tubes, etc., he is moved to doubt their authenticity because they look so modern and one has the same feeling when confronted with the frescoes of Crete. Perhaps, here again, we are observing one of the cycles of repetition we found characteristic of cultures. Again, one of the most recent discoveries in Upper Palaeolithic levels is the painting of a masked, costumed, male dancer,[4] a close counterpart of some American Indian drawings of a well-known ceremony. The parallel is so striking that we need show little hesitation in interpreting this old drawing on a cave wall, as evidence that ritualism was even then in full swing. Again these ancients not only buried their dead, but placed with them objects used in life. Can this mean anything less than a religious complex rich in traits? So one could elaborate, if there were need of further proof that the universal pattern held sway in the cultures spoken of as Upper Palaeolithic.

Some biological certainty can be added to this conclusion, for the skeletons of the people having these cultures have also a modern look; in fact one can be sure that, if revived, these old cave dwellers could walk our streets unremarked. But these Cro-Magnon men, as we call them, appear as a new race in the strata of cave cultures and it is coincident with them that there appears a new note—graphic art. Before them, in the Middle Palaeolithic strata, we meet with the Neanderthals, chinless stooping men; so according to zoological precedent, we should expect such a distinction in structure to be accompanied by an equally distinct mode of life. Indeed when we turn to the data for Middle Palaeolithic, or Mousterian culture, we miss the appealing cave paintings and the ornate handiwork of the Upper Palaeolithic, but yet these queer looking men buried their dead, accompanied by the tell-tale objects the archaeologist knows

[4] See Osborn in *Natural History,* vol. 22, pp. 27–41.

so well. We know further, by the bones scattered around their long buried firesides—note that fire was known—that they were hunters; even the bone of a wild ox has been found with a flint point embedded therein. This all looks familiar to us, for we have a right to infer that, since elsewhere these are the signs of complexes according to old patterns, this too was a complete culture. Thus, there must have been community life to accompany this hunting and religion.

But we are told that the Mousterians (Neanderthals) had no art. Yet, they chipped stone rather well—knives, borers, saws, etc., and made a few trials at bone carving. So a feeling for form and proportion they must have had in some degree; what none of their number did invent was drawing pictures on cave walls and etching on bone. Of this we can be certain, but that they did invent we know, for Mousterian culture passes through a cycle, or evolution of its own, just as we have shown later cultures to do. So, for all we can see to the contrary, the culture pattern we have outlined held for Neanderthal man as well. Its content may appear contemptible to us, the pampered heirs to a vast unearned increment of accumulated riches; but, for all that, the Neanderthals themselves had much to be grateful for.

Finally we turn to the deepest strata and beyond. But the beginnings of culture are still among the mysteries wrapped in the bosom of mother earth, and all we know is, that in the oldest archaeological strata so far discovered are flints bearing unmistakable chipping.[5] Yet the form and technique improves as we go up through the Acheulean level where we find some perforated shells and stones; these again are eloquent to the archaeologist, for they speak of art and dress complexes. Of fire, there is some trace, but of burial, none. Hunters we know they were, by the bones left behind; but beyond that,

[5] See page 227.

nothing. This is unsatisfactory enough, but one thing is clear: in this lowest stratum we are almost back to the very threshold of an invention destined to revolutionize human life; we refer to the chipping of flint. First we see but the crudest, yet purposeful, chipping, which step by step rises to symmetry and complexity.

Now, while we cannot be certain as to whether our culture pattern came in with pre-Chellean man, or later, we can say that one important complex, the making of stone tools, functioned there. We know further that it did not function alone, and since there is no reason to regard the invention of chipping as the initial invention of man, the natural assumption would be that culture was even then mature. Further, the fundamental nature of invention, the expression of the human mind, makes it plausible that our pattern was set long before pre-Chellean time. At least we cannot find in culture itself the data for tracing the genesis of the universal pattern. In the earlier discussion of this pattern, we met with suggestions that it was to be understood, if understood at all, as the expression of mental and psychological functions, which implies that these functions came upon the scene before culture began. Further, the chronological résumé we have just made seems to require that the same general pattern for culture has prevailed since the earliest stone age, and so, in answer to the query, as to where and when the pattern for culture arose, we can say no more than that one must look back to the dawn of culture and beyond. Hence, the objective data of culture, with which we are now occupied, can do no more than define the pattern and point out the approaches to the genetic problems involved.

EARLY STONE AGE CULTURES OF WESTERN EUROPE
Upper and Lower Palaeolithic Sequences

	Climate	Flora	Game
Azilian	Warm Humid	Deciduous forests	Reindeer, bison, ox—Arctic fauna appearing
Magdalenian	Arctic Rising temperature	Steppe and Alpine flora	Same as above
Solutrean	Sub-Arctic Dry	Tundra flora	Same as above Stag, hare
Aurignacian	Cold Dry	Steppe flora	Same as above Musk-ox, asses, wild sheep
Mousterian	Increasing cold, damp	Tundra flora, pine, yew, birch	Same as above
Acheulean	Temperate to cold and dry	Temperate forests Steppe flora	Deer, boar, horse, ox, beaver, otter
Chellean	Warm to torrid	Forest and meadow	Deer, boar, horse, ox
Pre-Chellean	Inter-glacial. Warm or temperate	Same as above	Horse, ox, bison, deer

FUNDAMENTAL LINES OF CLEAVAGE AT THE DAWN OF CULTURES

We have seen how trait-complexes diffuse outward from their centers of origin, but that when evolved around a game animal, a plant, etc., this diffusion will follow its distribution. Naturally, this spread of the trait may be due to the expansion of man as his faunal range extends, but, as we have seen, the same kind of diffusion may follow on the heels of such expansion. Any new way of utilizing the game animal in a hunting area will, in time, travel as far as the range of the animal. Again, the migrations of man, even at the present mo-

ment, show the universal tendency to seek an environment in which he can feel at home culturally. If, with these tendencies in mind, we turn again to the worldwide distribution of man and his cultures at the successive chronological levels, the facts so far available become intelligible.

Let us first see what kind of a world it is upon which man is to run his career. Looking down upon a globe, mounted in the usual position, the land masses appear to be the crests and sides of a long irregular ridge, a great pressure ridge, the geologists tell us. In general, the crest of this great bulge in the earth's crust begins at the straits of Gibraltar, runs eastward along the Mediterranean Sea, across to central Asia, or Tibet, where its greatest elevation is attained, thence angles northward, dips into Bering Sea to reappear in Alaska, turns southward, and terminates at the southernmost end of South America. This is the backbone of the world, a broad zone of highland whose general direction is east and west. On either side, the land falls to lower levels, eventually sinking into the sea. This, then, is the stage set by nature for her latest masterpiece, human culture.

Looking closely into the details of the setting, we note that while the great central belt is continuous from end to end, there articulate with it three disconnected areas; an aboreal, or arctic belt; an Old World tropical area; and a similar one in the New World. Here, then, are a few fundamental lines of differentiation in the medium in which culture functions. The long stretch of highland is characterized by warm temperatures, and dryness approaching aridity. Here is where we find the great deserts. The flora varies with the dryness but is, in the main, of moderate denseness. For convenience, we speak of this highland zone as the *mesa*. To the north, as we say when speaking of maps, lies the arboreal stretch; here are coniferous forests, fading out into the treeless tundra.

Tundra then we shall call it, and if one turns to the pages of geology, he sees this tree line fluctuating, back and forth with the climatic pulsations of the Ice Ages.

FIG. 15.—The Three Great Habitat Zones.

On the south side of the *mesa*, in Asia and Africa, lie the tropics, tending toward high temperatures, mois-

ture, and rank flora. This we may call the *jungle.* A somewhat similar but detached area is found in the New World, which, owing to the partial doubling back of the *mesa* belt, lies on the opposite side.

THE GREAT DIFFUSION ZONES

Tundra Zone From true tundra to steppes, plains and forests	North Europe	Russia Siberia	Siberia Mongolia	Canada Eastern U. S.	Argentine Patagonia
Mesa Zone Highlands—dry to arid	Southern Europe N. Africa	Egypt Mesopotamia	China Tibet	N. Am. Plateaus Yucatan	Andean Highlands Peru
Jungle Zone Low, humid, tropical	Tropical Africa	Southern Asia	Tropical Islands	Caribbean Area	Amazon Area

When with these main lines of demarcation in mind, we turn to man, at once we see a tendency for racial differentiation to follow the *mesa,* the *tundra,* and the *jungle.* The Negroid types have clung to the last. The Mongoloids largely held the great eastern stretch of the *mesa,* more than two-thirds of its extent, from Asia Minor to Cape Horn. The Indo-Mediterraneans somewhat overlapping the Mongoloids, hold the western end. And the *tundra* of both the Old and New Worlds, while usually apportioned respectively to the Indo-Europeans and the Mongoloids, is nevertheless the range of long-headed men, in contrast to the round heads of the *mesa.* In other words, we do find corresponding lines of cleavage, when man's biology is considered.

The processes of culture, as we now see them, prepare us for further correlations. The great civilizations of the world have been on the *mesa.* Here is where the great agricultural trait-complexes were built up as well as the metal-complexes. The domestication complexes—ox, horse, camel, sheep, goat, etc.—belong here also.

Just why the centers of origin for these trait-complexes lie in this zone it may be unprofitable to consider; but once they did arise and became adjusted to the local environments, their diffusion would follow the *mesa*. Again, the great hunting cultures known to us are at their best on the tundra and among the conifers, for they were built around the great game animals and their diffusion controlled accordingly. Finally, analogous situations are found in the *jungle*.

It matters not whether the environment be the sole cause for the appearance of what we call higher traits in the *mesa* (though we have shown that other factors play the dynamic rôle), or only a distorter, the fact remains that there was a very ancient line of cleavage in the racial antecedents of modern man, and that by their choice of habitats, or perchance only their respective geographical fates, the cultures to evolve from each were fundamentally conditioned. Not even the most hectic diffusion of modern times has been able to eradicate it wholly. Again, though each took with him into the new environment the same culture pattern, the content he built into it shows great individuality. But the most marked manifestation of the great stage lines we have sketched is in the movements of peoples, or dynamic diffusion. Assuming that culture arose in some generalized *mesa* section, probably the Iranian plateau, and that man himself was diffused thence; then the Negroid road leads through the jungle, the Mediterranean along the shores and islands of that sea, the Alpine road through the western end of the *mesa* itself, the great steppe and *tundra* road to Russia and the Baltic, etc. The *mesa* belt of north Africa is especially interesting, for, because it reaches southern Spain, there is a broad open road into western Europe. So it was no accident that Islam rode its horses into Europe by this road; their culture was merely spreading within its old setting. Later, this

same *mesa* horse complex and several adhering traits, among them Negro slavery, jumped the Atlantic to the other end of the semi-arid *mesa*.

To complete the picture, we find in the United States of today a descendant of Old World *tundra* cultures, also leaping the Atlantic in Colonial days, but sticking to a northern latitude and a familiar environment, and eventually meeting the newly transplanted *mesa* culture in Texas and New Mexico, just as some centuries earlier the parent cultures met at the Pyrenees. And again, as in Spain of old, these *mesa* traits are being crowded to the wall, but as we have seen in our sketch of the horse complex, some of them still cling to the *mesas* of the United States. And so we might go on with this fascinating correlation, but we have carried it far enough to see how it is that the cultures of the world fall into a few large geographical groups.

Every genetic view of culture, or of the differentiations that have taken place in the content of the universal pattern, must take account of such fundamental distinctions as the above, because the contacts between the cultures of the respective zones were broken at the start. So, the general similarities that have been maintained throughout stand as the triumphs of the universal pattern over the disparities of the several environments and over accidental circumstances. Had it not been for the stability of the pattern, these great culture zones would show far greater differences than they do, the probability being that we should find three distinct culture patterns.

EURO-AMERICAN CULTURE

There is another line of cleavage that is usually considered fundamental, that between the Orient and the Occident. It is not always clear what is meant by those who use these terms, but in most cases merely Asia and Western Europe are meant. In historical discussions

the peoples of these two areas are taken as antagonistic and it is certainly true that wherever the upholders of European cultures have met with serious trouble, the causes lay in the Orient. This seems to have been equally true in palaeolithic times. So from that day to this the leaders of both the West and the East have kept one hand on the sword. One may suspect such an old feud to be based upon something more than the commonplace; so culture incompatibility may be at the bottom of it.[6]

The cause and the locus of this fault line—to borrow a term from geology—is not well understood. We see it in the culture complexes, however. Art is a familiar example, particularly drawing and painting. In general, we say that Oriental art is highly conventionalized and does not strive to be realistic, while Occidental work approaches exactness in reproduction. Some object to this distinction on psychological grounds, holding that it is all in the interpretation of the symbols; but this is not the point at issue, for objectively there is an unmistakable difference between these two types of art. If we look at ancient art, we see the Egyptian, Chaldean, and other Asiatic cultures are somewhat like the Oriental in this respect; but the famous cave paintings and sculptures of the cave men, presumably far more ancient, are so like our own that they appear to be modern. Again, in contrast to Egypt, Crete stands out as even more modern. Further we cannot go with profit, but we can be sure that long, long ago, in two widely separated centers, two fundamental inventions were made in art; both have a great deal in common, but yet are wholly different.

Music is also cited as a mark of difference between the Orient and the West. True, we know little of the music of the ancients, but our music is based upon the old folk music of northern Europe. So in this also there is an ancient cleavage. No doubt it goes back to that

[6] See Bender, *The Home of the Indo-Europeans.*

same early day when western art was invented. It may be guessed, therefore, that one was the creation of hunters, or *tundra* art; the other a product of the *mesa.* What small advance it was that so biased, or conditioned, all subsequent accretions to the art complexes of each, is an interesting analytic problem, not to be taken up here, but we should note that it is due to the working of a principle we designated as pattern phenomenon, and a fine example it is.

It would indeed be illuminating to carry this analysis of our culture's individuality to a conclusion, but we lack data on many essential points. Phonetic writing again stands out in contrast to Oriental methods and although the Phoenicians have been suspected of originating it, there are not wanting signs of it in Crete. Anyway the phonetic alphabet was a new note in culture and set the pattern for the Occident.

Among the vaguer distinctions, but more significant, if true, are the traits attributed to the Aryans. It has been remarked many times that the boisterous gathering of men around the "flowing bowl" is peculiarly Occidental; not that the ancient Sumerians and Semites did not drink, but that their alcoholic complex was different. There seems to be a great deal more significance in this than one would suppose, for the Chinese and the adjacent nomads of the steppes had nothing like the western complex, and, so far as we can make out, the Sumerian, Semite, and Egyptian looked upon a good time as lounging before a kind of ballet, with orchestra accompaniment, and attending slaves; altogether a suave artistic procedure. In contrast to this, picture a smoky Norse hall, drinking horns in every hand, and ringing with jest and song. The Greek and the later Roman feast, though borrowing something from the east, was still of the old rollicking pattern. And we have it yet, though the "kick" has been taken out of the bowl. This

effort to eliminate drunkenness from the complex is commendable from every point of view, but few realize how deeply seated is this fireside complex and how fundamental are its ramifications in our culture. It may be true, then, that this pattern was set in Upper Palaeolithic time by the same tribes that originated the Aryan pat-

FIG. 16.—The Indo-European Area.

The primitive tribal cultures expanding into this area at the dawn of civilization laid the foundations to a culture that we recognize as Euro-American.

tern of speech. And closely associated with the Aryan festive gathering is epic poetry, for as has been pointed out by special students of literature, this particular form of poetry springs from the old folklore of Aryan peoples. Homer seems to have done little more than to reduce the best of the folk songs of his day to a convenient form for writing.

Another distinction appears when we examine the athletic complex. Play is a universal mammalian characteristic; but while all men play, they conventionalize their playful acts and so produce complexes in which it is difficult to recognize the old primitive element. So it comes about that the Occidental pattern of this conventionalization, which we call sport, is another contrast to the Oriental world. Many types of sport have risen and passed out, but the basic pattern seems to remain. Gladiatorial sports and the tournaments, including certain refined forms of dueling, are striking aspects of the evolution of this pattern, for the sport conception is truly Occidental, whether it is boxing, cricket, rowing, or any other of its well known forms. Historically, the Greeks stand out as the originators of sports, but the art treasures from Crete show men wrestling with bulls, indicating that the strenuous, life-sacrificing trait was deeply seated there. Further, we cannot go, but the inception of the pattern must have come to the same wilder folk who laid the foundations of Euro-American culture.[7] These are, however, but crude approaches to the much needed analysis of our culture, the great problem of the future.

The later career of the cultures belonging to our type are too well known to call for comment, except in one respect. Some time after the pattern was well set among inland hunters, there came on the scene a new type of nomad, the sea rover. However, this seems to have been after the diffusion of many fundamental *mesa* traits had made farmers and artisans of the old inland hunters. Then the wilder folk of the islands and shores found that the road to plunder and adventure lay upon the sea; these were not a new people, merely the un-

[7] For an interpretation of sport and athletics as a part of the respective cultures see Mitchell in the *American Physical Culture Review,* April and May, 1922.

tamed tribes of the common heritage. We do not mean that these pioneers of Euro-American culture invented ships, for even the old Sumerians seem to have known something about navigation, but that what many of the wilder folk did was to develop a type of sea raiding, as a method of preying upon the fringes of *mesa* culture. In other words, they conceived a rover pattern and borrowed from their victims to be, the appliances to elaborate and perfect the complex. When this began is not clear, but it appears as the foundation to Minoan culture, for they emphasized navigation, and thence successively in Greece, Rome, Norseland, and on down to the England of today. Thus again it is the same procedure, and Euro-American culture as a whole, as it stands today, was achieved by building into her stone-age patterns elements of culture emanating from the *mesa,* the steppes, and the sea of the Orient. So though primitive originality seems to have set the pattern of the Occident, diffusion brought all the riches of time to her door.

Concluding this glimpse into the dawn of Euro-American culture, it appears probable that original inventions were made by a dominant tundra people, at a time so early that the cultural heritage from the past was extremely weak in content, still in the formative stage, and without troublesome trait-complex patterns to strangle or to distort; but that once these initial steps were taken, the patterns were set, and from that day until now they have ruled with an iron hand.

ORIENTAL CULTURE

The archaeologists of the Near East have demonstrated the great antiquity of cultures along the Nile. Some of them in their enthusiasm assert that here all culture began; presumably they refer to trait-complexes. Nor should one overlook the great relative antiquity

disclosed, for when the pre-Chellean man of what is now France was struggling with his flints, the man of the Nile was experimenting with pottery and growing plants. But one must wonder what was going on farther east. About all we do know indicates that somewhere in eastern Asia, probably in the valley of the Yellow River, there started a rival center of Oriental culture to which we later gave the name Chinese. Eventually, this center was to contribute important ideas to the other cultures of the world. Knowing, as we have stated, nothing of the early archaeology of the Far East, we can only guess that it rests upon a stone-age foundation, but the one great outstanding fact is, that this culture has been able to resist the effects of diffusion and the inroads of militarism more effectively than its rivals of Mesopotamia and Egypt.

Yet one feature of the Chinese environment should be noted. On the northern border was the swarming ground of nomadic, or steppe cultures, a part of the great *tundra*. From these steppes, or grazing lands, came an exhaustless horde of those wilder peoples we have noted. The dominant complexes in their cultures were domestic animals and the milk complex. Felt is another contribution they have made to the world. Whether they were the inventors of domestication and milking we may doubt, but they at least elevated these homely arts to the level of great trait-complexes fully adjusted to the steppes. The cart also is an element they worked into this complex. However, the greatest of their achievements is the horse complex. The horse was for ages the swiftest and most mobile transport known to man; its spread over the world we have reviewed. From the very start these mounted raiders preyed upon the cultures of the *mesa*. They plundered not only goods, but ideas as well, and such as they could work over to fit their tribal patterns, they built into their own cultures.

No doubt, as now, they were sold the best weapons and such mechanical appliances as they could use, for the traders of every age have never hesitated to arm the wilder folk, even though their own lives were jeopardized thereby. And like all cultures, these of the steppes ran through their cycles, and occasionally one of them so elaborated its war and raiding complexes as to become a great power. Among the first to seize the governments of the *mesa* were the Semites, whose great chief Sargon (2750 B.C.) became ruler of Sumeria. Whether these were horse people we do not know, but a little later a fresh horde established themselves in Babylonia with horses. So, time after time, the political complexes of the Near East were displaced by tribes from the steppes, and the peoples of China met the same fate, though whether due to their great wall or the genius of which this wall is an expression, they have resisted more successfully. Nor need the reader be told of the assaults these horsemen of the steppes have made upon the strongholds of Euro-American culture, their last great attempt bringing them into Spain. But the zenith of their power seems to have been reached in the great Mongol Empire of Jengis Khan which flourished in A.D. 1200; perhaps this is the last, for Euro-American culture has appeared on the scene with novel means of transport.

What should be noted, then, is that these nomads have played an important rôle in the genesis of Oriental cultures, and it is clear that the content of these cultures was greatly enriched from the steppes. Militarism, tribute, and conquest on a continental scale have come largely from them. Also, it is certain that the harrowing the *mesa* cultures received from these wild riders stimulated them to greater inventions for which the world is now the richer.

To sum up, then, Oriental culture is now seen at its

best in eastern Asia. The Chinese Wall, so frequently used as a figure of speech, is symbolic of the position of China with respect to the culture of the nomad. It has been clearly shown that the old fundamental *mesa* culture is the same for the neolithic highlands of Europe, Egypt, Sumeria, Babylonia, India, and China,[8] for the trait-complexes built up around the cereals, the plough, the cart, and cattle, were the foundations of these cultures. From our understanding of culture processes, we infer that in the dawn of *mesa* culture these trait-patterns were set and naturally diffused to the Yellow Sea on the one hand and to the Alps on the other. And *mesa* culture still has these old biases, but it survives in its purest form in China. She it was who successfully resisted the culture of the nomads of the steppes, whereas, on the other hand, these nomads overran and ruled the *mesas* of Egypt and Mesopotamia. A striking example of this is in the use of milk. Now long before, the cultures of the *mesa* had a cattle complex, but they did not use milk. It was the nomads of the steppes, who stooped to that degradation; but they took this new food with them when they conquered Egypt and the other political groups. On the other hand, China, Korea, India, etc., to this day refuse to milk, or to touch its derivatives. Incidentally, we may note that the milk complex reached the west by natural diffusion along the steppes and the *tundra*. Laufer has called attention to the curious fact that epic poetry is found only among the milk-using tribal cultures, suggesting that there was a definite connection between the two traits. But this is a case of *adhesion*, for to the milk trait could be added the "feast in the hall" and many other deep-seated Aryan traits.

The schism, therefore, between Occidental culture

[8] See Laufer in the *Journal of Race Development*, vol. 5, pp. 160–174.

and the Oriental is, as we have hinted, the old one between the *mesa* and the *tundra*. Occidental cultures were conditioned by the ways of the *tundra* and the greater part of what they got from the *mesa* came by filtering through nomads, while still wild or, in some cases, through the semi-domesticated rulers of the Mesopotamian sector.

MIDDLE AMERICAN CULTURE

This title may cause some surprise, for our historians have so persistently ignored what our forefathers endeavored to trample into dust, that even we fail to recognize the origin of many present-day trait-complexes or to perceive whence came some of the innovations of our time. But thanks to the zeal of American anthropologists, there is now available a wealth of data as to the content and patterns of this third great culture province. In any case, our view of Old World cultures will not be clarified until we have examined the other end of the *mesa*. First, it is important to note that wheat, rice, and maize stand out as the economic basis to as many great complexes of the *mesa* cultures. That each of these evolved within their respective areas is shown by the fact that their wild ancestors are found within the same bounds: thus wild wheat in western Asia, rice in the East Indies, and maize in Middle America. That plants so widely divergent were chosen for the basic foods cannot be conceived as coming about except as the end results of extensive experimentation with the available flora, carried on independently. In other words, while it is not impossible that the wild ancestors of these grains were the first vegetable foods in each area, it is extremely improbable, for that in each locality the people should have first chanced upon these remarkable foods, is asking too much of the law of chance. Their very exclusiveness is proof that they are the respective

results of long and patient experimentation. But such a procedure would lead these great cultures further and further apart and so set up three fundamental economic patterns. Wheat, for example, was the basic food for Sumeria, Babylonia, Egypt, Crete, Greece, Rome, and the later Euro-American cultures, in all of which it dominates the cereal complex. On the other hand, maize was the cereal foundation of the culture of Middle America. So we see in this wonderfully instructive fact new evidences of distinctiveness in trait patterns among the world's great cultures. Middle America specialized in maize and thus from the start traveled a different road. The whole detail of handling maize is distinct from that of wheat, for while the latter grows *en masse* and invites the use of machinery and animal power, maize plants demand individual attention and for the most part the crop is still gathered by hand. Ingenuity would thus be directed to the elaboration and multiplication of hand processes in agriculture and to planting rather than to sowing. In conformity to these conditions the aboriginal culture of the New World was not only set upon a course of its own, but rigidly held to it. Perhaps related to this is the extreme development of skill in fine spinning and weaving, work so small and precise that modern textile workers gaze with admiration upon the fragments of ancient cloth preserved in a few of our museums. Equally fine work was wrought in gold and in turquoise inlay.[9]

Another distinctive aspect of aboriginal America was the absence of individual ownership of land. The field in which maize was planted was not property, in the sense in which we conceive it, but belonged to the group. Such group ownership is the rule among primitive

[9] See Crawford in *Anthropological Papers,* American Museum of Natural History, vol 12, parts 3 and 4; also Saville, *The Goldsmith's Art in Ancient Mexico.*

peoples, for the land is looked upon as the common possession of the tribe. What we see in America, then, is merely an elaboration of the usual tribal attitude toward the land, indicating that the military governments which grew up here evolved directly from tribal governments, or were indigenous. However, they exacted tribute, or taxes, of the subjected tribes, levied in goods and food, and maintained a well regulated system of barter; yet, with it all, they seem not to have hit upon the idea of using gold and other precious metals as money and as capital. Naturally, then all the complexes that go with capital, such as interest, exchanges, etc., were unknown. This gives one a new insight into the heart of the New World, where the money changer and the debt collector were unknown, but on the other hand, we meet with a colossal ritualism in whose name tribute was exacted in treasure and in lives. The degree of elaboration attained in these rituals is scarcely comprehensible, for not only every day in the year, but almost every hour called for its special ceremonies in the observance of which temples were maintained, priests ordained, and support demanded of the people. Manufactured objects, fruits, vegetables, animals, and occasionally human beings were sacrificed, but, in particular, offerings of blood were made. Sometimes this was drawn from the priests themselves. Hand in hand with the elaboration of these rituals went the study of astronomy and the evolution of a calendar system, for only with such a precise scheme could the priests keep track of the days and be prepared to present the proper ritual. Moreover, the type of calendar finally evolved is unique. There is not only nothing like it in the Old World, but some 2500 years ago no other people possessed a method of recording and reckoning time so precise and so satisfactory. No doubt the reason is that no other people had gone so far in the elaboration of rituals and, further, it was

for the sake of tribute to supply the offerings required by these rituals that new conquests were undertaken. Thus it was that men marched to their death for the sake of this ritualistic system. But not alone were those who thus sacrificed their lives in battle, for among the devotees were some who offered their lives upon the sacrificial altar, joyfully and gloriously, that the demands of the rituals be fulfilled. Thus we see to what heights this system of ceremonies had been carried and how in Middle America the ritualistic complex was the phase of culture most emphasized. This emphasis, no doubt, accounts for the failure of aboriginal culture to evolve political complexes comparable to those of the Old World or to launch out upon a commercial and capitalistic career.

Moreover, this ritualism is not a late development, for we find its essential features in all American cultures. The Indian was a venerator of nature in all her manifestations, he noted the heavenly bodies, the wind, and the rain, he studied the mountains, he observed long and keenly the ways of living things and from them received new insights, and conceptions which he embodied in rituals. And when he arose to speak, or sing a song, he expressed himself according to the ways of nature, thus giving utterance to a fine poetic symbolism. Rarely did he use figures based upon war and combat, even when narrating his military exploits, but chose always from the facts of nature to convey his meaning. This was the foundation upon which the more elaborate ritualism of Middle America was reared, but we see in it the fundamental pattern laid down among primitive tribes.

Another deep-seated trait in America is the personal guardian idea, or the conception that some specific supernatural manifestation in nature may be the expression of an established relation between the individual and some higher power. An animal may be looked upon as

the medium through which this power works and thus this animal comes to be the symbol of the personal guardian, but with each goes a ritual based upon the vision or whatever experiences accompanied the initial revelation. Nothing like this has been reported for the Old World, so we may set it down as another evidence of the early differentiation in Old and New World cultures. Further, it is notable that each individual had a specific guardian, a ritual and a form of worship which the tribesmen were bound to respect, thus creating a state of tolerance in ceremonial affairs and a readiness to accept all varieties of belief. It was this universal tolerance that so shocked the early missionaries to America, for while they found the Indian more than willing to accept the new faith, they could not understand why he refused to give up his old beliefs. To him there was nothing incongruous in recognizing both simultaneously. Naturally this was horrifying to a zealous Christian, but that merely means that here met two widely divergent world cultures, whose primitive patterns have nothing in common. As to how far this tolerant attitude prevailed among the late higher cultures of Peru and Mexico, we have no direct means of knowing, but as inferred from native art and from what few accounts of early observers there are, the individual guardian and its ritual were still in full function among the Aztec and the Inca. So this concept of the individual guardian is one of the fundamentals in New World cultures.

In general, then, the drift of aboriginal American culture started among primitive tribes from whose cultures were eventually evolved the elaborate forms we now speak of as Inca, Maya, and Aztec, and like the other great world cultures, the individuality of this one is due to certain very remote first steps by which all that followed was destined to be conditioned. Thus, from this brief résumé of the three great culture evolutions,

we see how it is that around the Mediterranean Sea, in eastern Asia, and again in Middle America, are to be found centers of originality, the foundations of which were laid in primitive tribal cultures. As we have seen, it makes little difference what trait-complexes are chosen for comparison, for each will be found to differ profoundly as we pass from one of these centers to the other. Many traits other than those we have cited could have been followed through with analogous results. Thus, in much the same way as the race was split asunder along certain ancient and fundamental lines of cleavage, the great cultures of the central highlands set out on their respective careers. Middle America, however, came to an end some centuries ago and is, therefore, not a factor in the future, except in so far as many of her trait-complexes have been copied by modern cultures, for as a great center she is as dead as Egypt.

PRIMITIVE PROTOTYPES

The unsatisfactory state in which we must leave this subject, the genesis of culture, is due to the poverty of data; but we may look forward with confidence to the day when the results of culture research will reveal not only the relative chronologies of the great American, Oriental and Occidental culture provinces, but also the contents of their primitive prototypes. There can be no more fascinating pursuit than this, the worldwide evolution of culture, for an ultimate understanding of the phenomenon is not to be attained by the circumscribed study of historic cultures, but by delving deep into their primitive foundations. History, in fact, but deals with the apex of a pyramid whose base is buried in the depths of oblivion. It is now clear that in these depths lie the records of these primitive prototypes; in time, the archaeologist and the analytic student of culture may

recover them, but even as it is, we can safely predict the general outlines of the narrative.

No doubt while still at primitive levels, the cultures of the east and the west borrowed of each other, but their respective trait-complex patterns rejected what could not be made over or successfully encysted. At the dawn of history we see this process still operating on a grand scale, but the patterns then set up are still in function. At the outset we hinted that our own precious culture rested upon a stone-age foundation, a statement which now seems self-evident; but it is well to note that it appears to be a different kind of stone-age foundation from that underlying Oriental and aboriginal American cultures and beneath these lies the yet undiscovered cornerstone to the whole structure; what this is like no one knows. What we may feel sure of, however, is that among the first great mutations, thrown off by this new form of life, were the American, Occidental and Oriental patterns.

So the general import of this review of culture processes is to bring into relief the significance of the facts of primitive and early cultures. Since there seems to be but one fundamental pattern and all cultures but follow out their careers according to discoverable laws, it is to the earlier and lagging cultures that we must turn for the necessary perspective. And now that we see how in these early forms were laid the very foundations of modern cultures, to be understood only when we view them as elaborations of the old tribal forms, we can only hope for more research in anthropology. We have, however, given more than passing attention to the immediate primitive elements that entered into Occidental cultures. What we observed was that, in the case of Greece, Rome, and the modern centers, a wilder people came in as conquerors, bringing with them their own biases. Yet these predispositions were much the

same, for all were of Aryan speech and presumably, therefore, were variations from a single parent culture. The significance of this should be noted, because the new wilder recruits to the great centers of culture, had, after all, a great deal in common, not only among themselves, but with those whom they came to dispossess. In contrast to the remainder of the world, the conquered and the conqueror were but the members of one great family. When we turn to the Orient and to America, nothing quite like this appears, for there seems to have been a greater disparity of early culture differences. This, however, must be taken with reserve, as the data for this part of the world are not accessible; but so far as can be seen the shifts were in conquerors rather than in centers, for the newcomers either failed in the long run, or were completely brought under the sway of the culture of their subjects. This is consistent with the appearances of greater disparity in the fundamental culture complexes of the conqueror and the conquered than prevailed in the Occident, from which it would follow that the great stability of the Far Eastern centers is due to the deep set bias of its primitive prototype. The nature of this prototype will be apparent when archaeological researches in Asia and America have been advanced to the same degree as in Western Europe. We can do no more, therefore, than call attention to the great need of research, both in the East and in the West, to reveal the foundations to the great cultures of the world.

MODERN TENDENCIES

When considering our own culture, a thing as precious to us as life itself, and which we see as a development from the ages, we cannot but show some concern as to the future, for a feeling of awe and helplessness comes over us as we contemplate the vastness of the phenomena

in which the individual counts for so little and yet occasionally for so much. For one thing, the center of Euro-American culture seems to be shifting to the New World. Its diffusion area is thus reaching out across the Pacific and its trait-complexes knocking at the back door of Oriental cultures. A new stimulus is thus reaching the Orient from the rear as well as the front. Already we see Occidental traits built into the old Oriental pattern; those that fit, they take readily, those that do not are resisted. What the outcome will be can but be guessed; but the chances favor a new cycle for the Oriental pattern. In the meantime we are approaching a period of culture wealth, or the crest of a cycle; we have elaborated some trait-complexes, as industrial corporations, political mechanisms, etc., until they are unwieldy. That this process can continue indefinitely is unthinkable. There must then come a time of standing-by, so far as these complexes are concerned. This is dangerous, of course, but there is hope in the fact that Euro-American culture is still young. If archaeologists are correct, Crete, as the center of Minoan culture, enjoyed a cycle of some 3000 years, and as compared with this, we, as a center, are still in the dawn. We should not, however, be overconfident, for the genesis of culture seems to have gathered momentum along the way, so that now a century may be momentous. Yet, this may be only apparent, for there are not wanting signs that even in the childhood of the world, there were bursts of speed in culture. There is, however, one outstanding characteristic of present-day Euro-American culture, namely, the exploitation of sources of power rather than of food, and the consequent development of mechanical traits. Above all this is a new note in the world; for we are not now thinking in terms of man power and animal power, the more primitive sources of work, but in terms of natural power. It is then the

elaboration of this complex, with all its numerous adhesions, that marks the present as unique.

BIBLIOGRAPHY

BENDER, HAROLD H. *The Home of the Indo-Europeans.* Princeton.

CRAWFORD, M. D. C. *Peruvian Textiles* (*Anthropological Papers,* American Museum of Natural History, vol. 12, part 3, 1915).

Peruvian Fabrics (Ibid., vol. 12, part 4, 1915).

ELLIOT, G. F. SCOTT. *Prehistoric Man and his Story.* A Sketch of the History of Mankind from the Earliest Times. Philadelphia, 1915.

GRANT, MADISON. *The Passing of the Great Race,* or, *The Racial Basis of European History.* Fourth Revised Edition with a Documentary Supplement, with Prefaces by Henry Fairfield Osborn. New York, 1921.

LAUFER, BERTHOLD. *Some Fundamental Ideas of Chinese Culture* (*Journal of Race Development,* vol. 5, pp. 160-174, 1914).

MITCHELL. *American Physical Culture Review.* April and May, 1922.

NELSON, N. C. *Proceedings of the Second International Congress of Eugenics.*

OSBORN, HENRY FAIRFIELD. *The Birth of Sculpture in Southern France* (*Natural History,* The Journal of the American Museum of Natural History, vol. 22, pp. 27–41, 1922).

SAVILLE, MARSHALL H. *The Goldsmith's Art in Ancient Mexico* (*Indian Notes and Monographs,* Museum of the American Indian, Heye Foundation, New York, 1920).

SPINDEN, HERBERT J. *Ancient Civilizations of Mexico and Central America* (*Handbook Series,* American Museum of Natural History, No. 3, Second Edition, 1922).

PART III

THE RELATION OF CULTURE TO MAN

CHAPTER XII

CULTURE AS HUMAN BEHAVIOR

ANTHROPOLOGISTS consider it their business to find out "what groups of people do." Consequently, they strive to take things as they find them, and so absorbed are they with their task, that they are inclined to scientific exclusiveness, and at times show resentment and even contempt for well-meaning biologists, psychologists, sociologists, and others, who offer interpretations of culture based upon their own technique and data, often taking the position that neither biological function, heredity, intelligence, nor, in fact, anything else is of the least value in interpreting culture. Thus it comes about that the attitude of anthropologists is frequently regarded as quite beyond understanding. But, taking them at their word, the students of these related sciences have set about making their own observations and interpretations of culture. However, neither party to the controversy seems to realize that anthropologists are, in the broad sense, behaviorists, and so stand shoulder to shoulder with those psychologists to whom the same term applies. As we have said over and over again, anthropologists, in respect to culture, deal with objective phenomena, and the contempt which they show for conscious and rational interpretations of man's acts would

do credit to the most radical behavior psychologist. For example, Watson says:

> Psychology as the behaviorist views it is a purely objective experimental branch of natural science. Its theoretical goal is the prediction and control of behavior. Introspection forms no essential part of its methods, nor is the scientific value of its data dependent upon the readiness with which they lend themselves to interpretation in terms of consciousness.[1]

And again from an anthropologist, a statement that might well be incorporated in a declaration of principles by a behaviorist:

> The cultural facts, even in their subjective aspect, are not merged in psychological facts. They must not, indeed, contravene psychological principles, but the same applies to all other principles of the universe; culture cannot construct houses contrary to the laws of gravitation nor produce bread out of stones. But the principles of psychology are as incapable of accounting for the phenomena of culture as is gravitation to account for architectural styles.[2]

Thus, the position of the orthodox anthropologists seems to be "that culture is a phenomenon in itself to be explained in terms of itself." One can readily see the insufficiency of such an attitude, but we should not overlook the fact that the majority of anthropologists are hard-headed empiricists, who regard it as their job to record and describe the phenomena of culture and not be troubled with origins, processes, and least of all, with laws. To suggest to them that the ideal objective of anthropology is a rational control of culture processes, is to invite derision. They regard theirs as a pure science, and leave to others the problems of the hour. But in these reactions on the part of anthropologists we see indications that they are very much in love with their work, and the reader familiar with current psychological

[1] Watson, *Behavior. An Introduction to Comparative Psychology.* p. 27.
[2] Lowie, *Culture and Ethnology,* pp. 25–26.

literature need not be told that when the anthropologist shows a disposition to bundle the regular psychologist, the moralist, etc., out-of-doors unceremoniously, he is acting like an up-to-date behaviorist.

Yet, there is one important distinction between the behavioristic anthropologist and his psychological colleague, for when the anthropologist asserts that the content of culture is "the capabilities and habits acquired by man as a member of society" (Tylor), it is clear that acquired human behavior is his concern. On the other hand, the true behaviorist is bent upon discovering what men and animals do by original nature. This, like all such statements, is not to be taken too literally, for both the anthropologist and the behaviorist will at times cross the border; yet, it does consistently place the emphasis as between acquired behavior and in-born behavior. We should not, however, commit ourselves in advance to an interpretation of culture as acquired behavior to the exclusion of other kinds of behavior, for that is the crux of our problem. What we do now, is to assert that culture is the outcome of human behavior, and thus define its biological basis and origin.

THE IN-BORN EQUIPMENT

Looking at babies in general, we may suspect that they come into the world with certain equipments and that it is because of these equipments that they are human. If we ask ourselves what it is that one of these babies is fitted to do in the world, anthropology answers, "participate in culture." In other words, from the anthropological point of view, a man is born with an equipment to function as a member of a tribal group, and, as such, to participate in or to practice culture, as you may prefer to regard the phenomenon. And a little reflection may convince us that the wise men of old recognized this problem, for we find the great religions of the world,

especially our own, based upon one fundamental assumption, viz., that every baby arrives with the necessary equipment to take part in culture and that in this respect all stand upon a plane of equality. It is, of course, true that each creed and cult set certain limitations to this principle, but these did not negate the fundamental assumption which was, *that external, or environmental, forces are in the main responsible for what the baby becomes and does.*

The history of education is also the story of man's struggle with this assumption, and though today we are swinging around to the view that the baby has a highly variable equipment of his own, still it must be admitted that we are almost wholly in the dark as to precisely what equipment a baby has by inheritance. If there is a fundamental problem in education, in psychology, in zoology, and in anthropology, it is this—to analyze man's original biological equipment for culture, to discover its limits, and its genesis. One may suspect that since the world has blundered over the question so long, its solution will be peculiarly difficult. Possibly so, but the chief difficulty seems to lie in the fact that the problem is broader than any one of the sciences we have mentioned and demands concerted attack.

In a general way, everyone will agree that the baby acquires its culture—the culture of the group it happens to be born into. Thus, the Eskimo baby does not bring with it a snowhouse-dwelling trait, nor does a baby in Chicago have an elevator trait. Such a claim one would at once set down as nonsense. Again, the Eskimo baby cannot speak Eskimo, nor can the one in Chicago speak English; each must acquire the language of its culture. If these babies change cradles, as did the mulatto and the white child in Mark Twain's story of *Puddin'-Head Wilson,* then we would expect the Eskimo to speak English and *vice versa.* Therefore, it seems to many

observers that the whole of culture is acquired, that it is an objective construct of the human mind, one whose existence lies wholly outside of the germ plasm. If this be true, then the perpetuity of any type of civilization or culture, depends upon the continuity of that culture, for if that is broken, all is lost, even though the race survive. As a matter of fact, something like that does happen when a given type of culture dies. Yet, at no time in the long vista that anthropological research so far reveals to us, is there evidence that such a calamity as the total extinction of culture befell mankind. Rather do we see, that in spite of back-slidings and interruptions, the march onward and upward has proceeded with an ever accelerating pace.

But, if it is true that culture is wholly objective to the germ plasm, how did it get started? Some say, by accident. But when culture first started, it must have been as when a baby essays to walk, there were many tumbles, haltings, and interruptions. As we are not now talking in terms of the individual but in terms of the race, so whole generations must have come and gone between these first trials, thus making the isolation of the different generations of babies fairly complete. Take the use of a piece of stone for scraping. Can we conceive of continuity from the first random scraping of an individual to the present, if the whole thing is objective? Anyway why should the accident have kept on repeating itself until it became fixed in the habits of the group? Possibly then, it is not correct to say that culture is a mere objective construct and not in some way a part of man's inheritance.

In the case of speech, one of the most distinctively human characters, we can be sure that though our children do not inherit the English language, nor the children of Greenland the Eskimoan tongue, still each does inherit a mechanism of some kind, the functioning

of which produces speech. Just what is its nature we are not prepared to say: that is one of our problems. But since each can learn the speech of the other, we infer that for all practical purposes, the mechanism in the inherited complex is the same for each race and so for all races. At least it seems to make little difference to this speech mechanism which of the world's tongues it acquires.

Also, we say that man is a tool-using animal and tools of one kind and another make up his culture. But what is the relation here to the germ plasm? It has been said that the baby conveys food to the mouth by his original innate nature; but later, he learns to use a spoon and so acquires a tool-using habit, or a trait of culture. If we observe this case closely, it appears that the child was by nature provided with an equipment that could make use of a spoon as a tool for conveying food to the mouth. If he happened to be born among a people whose culture did not require eating with spoons, then he would not acquire that habit. He might, for example, use chopsticks. But looking at the tool-using complex, of which the use of a spoon is an example, the question arises as to what is the form of this complex in the innate behavior of the child. This has never been adequately investigated.

But again, since all human beings use tools, we may, for the time, infer that all are born with a tool-using mechanism which is not particular as to what kind of a tool it learns to use. Yet, while we feel that we are safe in the broadest aspects of this conclusion, the subject is in crying need of investigation, and those interested in the fundamental problems of education, psychology, etc., could well afford to take a day off and make common cause with the anthropologists on this problem. There is, of course, no great difference between the individual problem and that of the race, for

if all individuals are equal in that they possess a tool-using equipment, then also are the races.

In this connection, attention may be called to certain researches by psychologists. Watson, in particular, has sought to discover the innate factors in reflexes and emotions, and some of his experiments are particularly suggestive here.[3] In the hospital where he worked were a number of infants, born there, and never out of the ward. For some months they were isolated to a far larger degree than the infant in the home, and the daily routine of their lives known. It was in such babies that Watson sought for innate fears. Now we have always been led to suppose that we bring with us into the world a large set of fear reactions, which we spend most of our lives getting rid of; yet there were but two things that brought this response from the hospital babies, falling and a loud noise, like striking a bar of steel. Dark, light, cats, dogs, rats, birds, etc., were all tried, none of which brought out the fear response, and the animals, no matter how hairy, were reached for and handled joyfully. This is, of course, contrary to the traditions of our culture, but since these experiments are about the only attempts in this direction, they should be given due weight.

However this may be, we should note the next step in these experiments. A white rat was brought in and as one of the infants touched it, the steel bar was struck. It took but a few repetitions of this to cause the infant to show fear and to cry at the sight of the rat. He did even more, he was then equally afraid of all hairy creatures, and even of a fur coat with which no bar had been sounded.

The psychologists sometimes call such fears as that

[3] See Watson, John B. and Rosalie Raynor, in *The Scientific Monthly*, vol. 13, pp. 493–515; also Woodworth, in *Dynamic Psychology*, Chapters 3 and 4.

developed by these babies for the rat in the first instance, *conditioned responses,* that is, a new association has been formed, by accident or otherwise, between the fear tendency and an object not heretofore capable of exciting fear. But we note that the baby, unaided, extended this *condition* to hairy objects. In other words, the baby is set, tuned, or wound up, so to speak, to *condition* his own responses, when the opportunity comes.

These illustrations enable us to glimpse the complexity of the habits a child may build up in response to his culture setting, or home environment. Conditioned responses and conflicts of the most diverse kinds are thus set up in him, long before there is anything in the way of purposeful training and education. Further, these experiments indicate that the equipment the child brings into the world is relatively simple, but capable of forming a bewildering complex of conditioned responses, or habits, on short notice. The significance of this is that the child may be emotionally and motorly *set* to the culture of his parents in the first two or three years of life. For example, Indian children have been put into our schools at eight to nine years of age and then sent home again as young men and women, apparently soaked in white culture, only to throw off this new coat of culture and step forth as Indians. Many thoughtful people have pointed to this as proof that Indian culture was in the breed, in the germ plasm as it were, and would come out in spite of everything; but this is probably nonsense, for the Indian was made an Indian in those first eight years of life by his surroundings, and when again thrust into those surroundings all his early conditioned responses began to function fully. So it looks as if a healthy, normal infant were born with an equipment to fit himself into any kind of a culture that came along; but once fitted in, he is very much set and difficult to change

If the reader turns to psychological and sociological literature, he will meet with mystifying classifications of the inborn equipments of man under the heading of instincts; but we fail to see that these classifications aid in the solution of the problems we are now facing. The only data that will help us are of the kind just referred to, the results of scientific observation upon the newly born. It is only such data that rise to the empirical level of the data for culture. Unfortunately, we cannot yet enumerate the responses a baby makes when first confronted with the realities of the environment and of culture. The few incomplete experiments we have cited are but hints as to the method of approach. For our purpose, then, and to avoid conflict of opinion as to the meaning of instinct, we shall speak of what is innate in man as his equipment for culture. We can further distinguish as a part, or a phase, of this equipment, the making of *responses*. Thus, an infant responds to a loud noise in a way that we speak of as fear. He may also show resentment at restraint, or at being shut in; and so we might continue to summarize the observations and conjectures of psychologists, but for that the reader must turn to the literature of the subject. However, our chief concern is, whether the innate responses are such as are needed to fit the baby into the culture of his group. That such is the case, many take for granted; yet there are not wanting theories and explanations of education, society, and of culture as a whole, which, if carried out to their logical ends, would imply that all our innate responses were in the wrong direction and that we are fitted for culture solely by the learning of a new set of reactions. This view must arise from a failure to understand the learning process, which is essentially a conditioning of responses. Thus the infants noted above learned to be afraid of hairiness, and presumably by a similar method they could have been made

afraid of other qualities in nature. We know also that responses may be conditioned spontaneously, without instruction. So, in general, the conditioning, or habit-forming ability of the infant is an important part of his equipment for culture.

Further, we usually regard man as the thinking animal. What is meant is a response complex peculiar to humankind in contrast to other living forms. Yet one curious fact is that though so much has been written as to whether dogs, horses, ants, and other creatures think, the outcome is wholly unsatisfactory. But it is of no moment to us now whether dogs think, for what we do know is that the response complexes of men are not the same as for dogs. And when it comes to culture, it appears that the infant responds, or learns, not by acquiring new reaction mechanisms, but by the conditioning of his inborn responses. The point to fix in our minds is, then, that man cannot respond except within the limits of his equipment; but we are still far from understanding what these limits are.

THE STATUS OF THE CULTURE PATTERN

It seems reasonable to suppose that what all men have in common is inherited. Hence, in so far as their behavior is uniform, we may expect it to be grounded in original nature. In the preceding sections of this work we have shown that not only do all men have cultures, but these cultures have a great deal in common. There must then be some inborn basis for the phenomena of culture. The literature of psychology and sociology attempts to ground the whole structure upon specific instincts, and though it cannot be said that these efforts have met with success, it is of interest to note the cycles through which speculations upon these subjects have run. Thus, there was a time when babies were supposed to possess nothing in the way of culture instincts, but to

come into the world like a tablet of wax upon which the environment began to write. In the course of time, this view was qualified, until some decades ago it was asserted that we not only had instincts, but an almost infinite number of them. Now opinions are swinging back again toward the other extreme, for it appears that after all man may have but a few instincts. We shall leave this problem to the psychologists, but it is well to note that there are but two outstanding examples of social organization in the whole gamut of life; these are man and the social insects—the ants, termites, bees, and wasps.[4]

Curious, is it not, that we must go to the insects for our only parallels? Yet, we are told that with the social insects the whole round of life is really fixed, or inborn, so that one bee can, as the only survivor, lay eggs, and perpetuate the colony. This is not at all like what we have supposed to be true of man, so there is the appearance, at least, of a fundamental difference. Hence, we might suspect that while the innate equipment of the bee for socialization is complex and fixed, that for man is wonderfully simple and elastic; and, indeed, we have seen what a variety of culture types there are among the people of the world; how a tribe may change from one to another in a few generations, or one kind of culture displace another. Nothing like this is observable among the social insects. How then could this multiplication of culture traits go on, if man came into the world with a large equipment of instincts? Suppose, for example, that making fire with a wooden fire drill were inborn, so that as soon as our children ran about and received the proper stimulus, they would automatically produce fire; then a new method of making fire could not arise until a corresponding change had taken place

[4] See Wheeler in the *Scientific Monthly*, vol. 14, pp. 497–524; vol. 15, pp. 68–88; 119–131; 235–255, 320–337.

in the germ plasm. Further, from our experience elsewhere, we would expect that the one precise method of making fire with the wooden drill would prevail throughout a single species and not change until the species changed appreciably. If the Eskimo, for instance, had this inborn trait, we should expect them all to make fire in the same way and no other. As a matter of fact, the Eskimo use two methods of making fire—one with wooden drills and another with iron pyrites when they can get it. They also quickly learned to use matches. So one might go on with example after example. In short, the studies of culture by anthropologists lead us to expect that the inborn equipment of man is relatively simple. In other words, what we know about culture is consistent with the view that man has relatively few instincts.

Frankly, then, we are puzzled; for what kind of a mechanism is this equipment of the baby, in contrast to the ant, which is so elastic as to adapt itself readily to the culture it happens to be born into? The social complex of the termite, ant, and the bee is certainly much more like the culture of man than any other kind of behavior we know. The general resemblance is obvious and has been commented upon *ad infinitum.* The entomologists tell us that the social life of the ants and termites is similar in pattern and as such distinguishable from that of the bee. The termite, for example, is distributed over the greater part of the tropical and temperate regions of the earth and the ants somewhat wider afield. Thus, like man, they have overrun the whole earth; again, everywhere the termites show the same fundamental termite pattern of behavior, or socialization, though its content varies from species in the tropics that have domesticated other insects, practice agriculture, etc., to those of much simpler content; all of which sounds like the story of man. On the other hand, the

species patterns of socialization for the termites seem to be in a large measure inborn.

In our analysis of man's culture we found evidences of a universal pattern, which, in this connection, we may speak of as the human social pattern. Though our knowledge of this pattern is still unsatisfactory we saw how it could be readily comprehended under such culture complexes as speech, tools, art, ritualism, government and war. Wherever we have found man, appeared a culture that conformed to this scheme, the unity of which lies in that all the trait-complexes that fill it are in a way the mechanisms in which the phenomena of culture make themselves manifest. But the significant thing to us is that the pattern for human socialization is not the same as that for the ant, nor for the bee; it belongs to man. While there are, as stated above, similarities between the human culture pattern and the social patterns of the ant, we are now concerned with the differences between the two. One of these, or rather one of the assumed differences is, as we have said, the fact that the continuance of the termite pattern, for example, is dependent solely upon the continuity of the germ plasm; whereas the human pattern is assumed dependent upon the continuity of the culture itself. However, the distinction between the human pattern and its content is rarely considered, so that in so far as this assumption applies to man, it merely states that the continuity of specific trait-complexes requires more than the continuous existence of the germ plasm.

We have been to some pains to show that the concrete specific content of the culture pattern, as we find it in a given tribal group, may be explained by historical methods. In this way we can account for the history of any specific trait-complex as due to the accidents of time and place, and not dependent upon changes in the germ plasm. But this has nothing to do with the origin of the

culture pattern. Returning now to the experiments with hospital babies, we can account for the baby's fear of a white rat in terms of the history of the case, but not for the fear reaction itself, nor for the peculiarity of this response to condition itself. Further, it is evident that this one baby might by suggestion lead to the conditioning of the white rat by other babies, and some of these as adults condition yet other babies and so on until the whole tribal group held this animal in fear. Thus would a trait-complex begin in the culture of the group. No doubt, the fears of snakes, mice, spiders, etc., prevalent in our own culture, can all be explained as historical phenomena. This is an important matter and not to be lost sight of. We can thus explain why a native of France speaks French and a Greenlander, the Eskimo language; why Japanese art differs as it does from Italian; but as to why the French and the Greenlanders have speech, the Japanese and Italians art, along with all the other peoples of the world, this method of explanation tells us nothing. So while the historical method can account for the concrete content of tribal cultures, it fails completely when confronted with the culture pattern. For this another kind of explanation must be sought. In an earlier consideration of the pattern we found it based upon psycho-physical functions, but these are inborn, and so we must reckon with the possibility that the pattern for culture is just as deeply buried in the germ plasm of man as the bee pattern in the bee, and may assume, as a working hypothesis, that a human being comes into the world with a set, or bias, to socialization, according to a definite pattern, and that this bias is firmly rooted in the germ plasm by reason of which a man is a human being and not a termite, a bee, nor even a monkey. The human pattern, therefore, is a part, if not the whole, of man's inborn behavior. Whatever differences exist between this behavior and that of

the social insects are to be sought in the respective germ plasms and not in the environmental histories of the individuals concerned.

THE DRIVE TO PRODUCE CULTURES

The conclusion to the last paragraph may seem commonplace but it is, for all that, an important one. For one thing, it puts a definite limit to what a group of men can do; they have a type of behavior as inevitably fixed as that of any social insect. If the bee is merely a hive builder, so is man merely a culture builder. All the strivings of mankind as shown by the débris left upon and in the earth are but the manifestations of this behavior—man builds cultures because he cannot help it; there is a *drive* in his protoplasm that carries him forward even against his will.[5]

So it follows that, if at any time the continuity of culture were broken, the human group would begin to construct anew according to the old pattern. To this possibility we have referred before and found reason to believe that such absolute complete breaks for mankind as a whole have not occurred since the beginning of the stone ages, but partial breaks are in evidence even in historic time. It is far from impossible that more than once a few young children survived in isolation with but a limited speech and few culture complexes. However this may be, the theme has been a favorite among story tellers of all ages, Herodotus having preserved to us a charming version from ancient Egypt, according to which one of those ancient kings tried the experiment of bringing up two children in isolation to see what their speech would be, assuming that such would be the original native language of mankind. In other words, this ancient thinker was seeking for the innate facts in speech. Such experiments, if properly

[5] See Woodworth, *Dynamic Psychology*, Chapters 7 and 8.

conducted, would reproduce a true state of isolation in which the inborn social behavior of man could be seen taking the first steps in filling out the pattern. Yet under normal world conditions no such break as the elimination of adults in a single group here and there could be of much consequence to culture as a world phenomenon, for the simple reason that one tribal culture can borrow from others. Sooner or later the descendants of the lost children would break their isolation and come into the common heritage. Hence, to make the experiment conclusive, such a group of children should be conceived of as the sole survivors in a world catastrophe. So while the value of these romantic fancies may be questioned, their consideration does throw into high relief the significance of diffusion as a short-cut to achievement in culture.

Returning to the conception of a social drive in man, we are once more confronted with the problem as to the nature of this culture-building behavior with which all babies are born. Referring again to the experiments with hospital babies, we observe a number of significant responses as a part of their equipment for culture building, such as fear of falling and of loud noises, grasping objects, resenting being held fast, etc. Each of these responses will be called forth by a specific stimulus, perhaps one only; but, on the other hand, each response is, curiously enough, open and ready, in fact impelled as it were, to hitch on to most anything that comes to hand. So at once the baby begins to absorb the elements of culture belonging to his group. That he can ever quite free himself from these early adjustments is improbable. Referring again to the *Puddin'-Head Wilson* story, we are told that though the white youth was eventually restored to his status, he could never quite fit himself into the new order of things, he being *set* to the negro culture of his time. Again, Mini Wallace, the Eskimo

child brought up in New York City from infancy, tried as an adult to return to the Eskimo, but found himself hopelessly out of joint with that culture. His germ plasm was all right, but his conditioned responses were all wrong.

Of course, too much weight should not be given these examples, for they are more or less fiction. We cite them only as illustrations. Turning again to the pattern of culture, we may note that two of its great complexes are tools and rituals. As previously stated, a ritual is a formula by which something is to be brought to pass. Pasteurizing milk is a formula; wearing a rabbit's foot is another; avoiding the number thirteen, another, etc. In each case the reaction is from effect to the assumed cause, and if there were need, it could be shown how completely this characterization will cover that part of culture that passes for superstition on the one hand and for scientific procedure on the other. We can doubtless agree that along with the mere grasping response there is one which we may speak of as tool-using, viz., the assumed tendency to seize a convenient object for pounding or striking. We have reason to suspect that there is also a response at the bottom of the ritual, but we hesitate to say what it is like; for both these subjects need investigation. So we must be content with the guess that the response is there. What we may suspect is that the ritual is the response that leads one to seek to complete the sequence of cause and effect when an effect is experienced.

Anyway, given these two responses at birth—tool-using and ritual-forming—we can account for a large fraction of culture trait-complexes by *conditioning,* as that term has been used. The universal pattern for culture is then largely determined by the number and kind of these inborn responses the baby possesses. But before proceeding, a word may be said as to this *condi-*

tioning process. You will note that the baby in the hospital experiment generalized, as it were. He selected out one character of the rat, hairiness, and then reacted similarly to many other hairy objects. A psychologist may object to this by saying that the baby failed to discriminate. Yet, it has been reported that with animals responses are conditioned, if at all, specifically, and not so as to embrace a series of objects with a common character. Anyway, what the baby did looks very much like thought, or reflection, using those terms loosely. This power of reflection plays a great rôle in the behavior of man, it even has strong claims to being the one distinguishing character of human behavior. If, for example, the termites were possessed of this power, they would have put us on the run long ago. But, returning to our subject, the development of tools can be explained as due to a relatively simple tool-using response, which acts and is then made the object of reflection. This reflection is in turn a *response,* it is inborn.

In like manner, it seems that a ritualistic formula is an outcome of this reflective function, for at bottom it is merely the *conditioning* of the cause-effect response. Thus, a warrior wearing a necklace of bearclaws for the first time, escapes injury in battle and automatically formulates it thus—bearclaws on the neck, invulnerability in a fight. Upon this as a foundation will be built up a formula of greater or lesser complexity. Eventually, it is conceivable that all of the tribal group may by suggestion, etc., make the same associations. But some individuals will go farther and generalize as it were, to the end that protection may be secured by the wearing of something. Once having arrived at this stage, certain curious individuals may set out to discover what somethings there are that do this, and so engage in primitive research, as it were, producing a series of charms and amulets such as we see in museums.

Thus, when we consider the biological drive behind the phenomena of culture, we get a new insight into their workings. What we see here is not a full explanation of the phenomena, far from it; but a suggestion that all the details of trait-complexes in culture, the curious things that the people of the world do, are largely variants in the conditioning of inborn responses. Finally, we see the justification for characterizing culture as the product of human behavior. But to come to this realization, it was necessary to study in detail the cultures of the world, whose development and varying fortunes are the contents of history in the larger sense. Further, the great background to social and national problems comes from this study of primitive tribes and from what is thrown out from the trenches of the archaeologist, and it is due to the careful, critical review of these phenomena that we are now able to lay bare the pattern of culture and begin the isolation of the factors that make up the human behavior complex. From this vantage ground, it appears that in man's original nature are the factors that determine the general pattern of culture, for we have seen that the conditioning of responses and the reflective response, or thought, are the outstanding factors in human behavior that produce culture. Here, then, we should look for the primary origin of culture, though the direction in which trait-complexes expand and evolve depends upon fortuitous events and the nature of environment. In general, then, there is a dynamic factor back of the culture pattern which sees to it that its complexes are rounded out. In other words, we see a sharp distinction between the content of culture and the universal pattern; the former is, in the main, acquired behavior, the latter is an expression of inborn behavior.

It would, however, be improper to leave this subject without some further consideration of this innate drive.

The many definitions of sociology and social psychology that have been evolved and the successive attempts to interpret social activity so conceived have, in the main, ignored the drive. They have sought instead to base social systems and control upon compromises between a colorless intelligence on the one hand and a self-indulgent, emotional instinct complex on the other. Thus, going back to the days of Cromwell in England, we find the celebrated Hobbes asserting that there is nothing in man's native equipment to neutralize self-seeking and that in a state of nature the hand of every man would be against his fellow; culture would be, according to this view, a scheme man had invented to hold this savage tendency in check, or to control it. Some two hundred years later, usually associated with the name of Jeremy Bentham, this idea is given a new turn by claiming that man found the best solution of the difficulty to lie in devoting himself to the welfare of his fellows. Again, we find this view giving way to another, attributed to Tarde,[6] who would regard the tendency to imitate as inborn and to be the chief mechanism in the production of culture. Yet, according to this view, culture would grow up in an aimless, fortuitous fashion and be perpetuated by naïve imitation. Next, we come to a fuller recognition of the possible inborn basis for culture, for the exposition of which one should turn to the writings of McDougall. Here we see an attempt to base the whole upon a wider range of native responses, though even here the number regarded as significant is small indeed; as fear, disgust, curiosity, etc., some twelve in all, with an indefinite minor series. Regardless of the content of this list, the idea is that there is an innate base to culture; but the theory, as developed, interprets social phenomena as imposed control or discipline by the

[6] Tarde, *The Laws of Imitation;* McDougall, *Social Psychology;* Baldwin, *Social and Ethical Interpretations in Mental Development.*

older and stronger members of the group. It is conceived that in this way, a part of the group distorts and compounds the innate responses of the young.

Now, if we look back upon these representative formulations of man's native equipment, it is noticeable that they seek the source from which comes, not culture, but merely a part of its complex. This control and discipline of the individual, which all find so strange and unaccountable is, after all, but a culture complex. Its conventional forms in a tribal culture, or its trait-complexes, are based upon inventions and are in reality but mechanisms for meeting specific situations. Culture is far broader and more fundamental; that is why mere politics has cut so little figure in it. The general dissatisfaction with all these views and with the many books that have been written on them is due to this exaggeration of the control machinery. Instead of facing squarely the totality of human behavior, as an objective phenomenon, they seek to account for the results by a miraculous distortion and reversal of a few brute tendencies, a condition forced upon the majority by direct or insidious methods. Seldom, however, do the supporters of these theories think of the small group at the top, the masters of discipline; their behavior must, if one is consistent, be based upon the same perverse and crafty tendencies that they manipulate in others.

To meet the above deficiencies the behaviorists and especially the dynamic psychologists suggest the addition of a *drive*.[7] As they see it, there are two things to be taken into account, the mechanism and the drive; the former refers to the manner of procedure, the latter explains how it came to be undertaken. We are familiar with the conception that when activity follows the lines nature intended that it should, the result is enjoyable; but this only means that the innate is expressing itself.

[7] Woodworth, *Dynamic Psychology.*

Strange to say, most sociological theories overlook this significance of behavior. If we take a rough inventory of man's behavior from this point of view, we find among the enjoyable activities the following:

A new discovery
Recognition by companions
Telling something to others
Manipulating objects
Participation in the activities of others

It is not claimed that these cover the whole range, for it is enough to assert that at the bottom of each manifestation of this kind is a drive, and whatever these drives are, they are part of man's native equipment. Without the urge to invent, to tell something, to be with one's fellows, etc., it is difficult to account for the uniformity we have observed in cultures. So whatever may be the real nature of the pattern for culture as a whole, it is to be considered nothing less than a set in human germ plasm, and both the mechanisms and the drives that underlie the objective phenomena of culture, in their totality, constitute the native equipment of man.

THE PROTECTIVE RESPONSE

We have not at any point in this discussion considered the possible existence of a protective response that makes for the perpetuity of culture. True, the conditioning mechanism we have noted works toward this end by guaranteeing that the newly born shall be warped to fit the several trait-complex forms that make up the tribal culture. But there seems to be something more to the point, for the moment the continuity of a culture is threatened, the tribesmen rise to its defense. Students of history, and above all, those who attempt to manipulate governmental and military mechanisms, seem not to

have given this deep-seated response due consideration, for above all, a group will not only rise to the defense of its culture but will resist to the limit. The response is not unlike that of the mother protecting her child. While attempts have been made to explain this reaction as mere tradition, and conscious efforts are made in Euro-American cultures, and perhaps others, to arouse the group, what really takes place is a kind of conditioning or directing the response. The response itself is not created in this way, but is inborn.

The practical importance of recognizing this protective response on the part of the culture group is very great, for it is one of the causes of war, in many cases the sole cause. Hence, all schemes of political consolidation, and even of international cooperation, should take these facts into strict account, since we see their manifestations in the events of recent years. Also the recognition of this response will make for a clearer understanding of the problems involved in the assimilation of our foreign born, for many people find it hard to understand how even the intellectuals of alien descent as well as their children can be cold and indifferent to the fate of our ideals and institutions. The real reason is that they are strangers still. But, on the other hand, if one attacks the culture and ideals of their homeland, they cease to be indifferent, becoming at once resentful. These and many other examples of human behavior all point to a universal protective response. Finally, the recognition of these facts should lead to a sober view of the Americanization problem, upon which hinges the future of Euro-American culture, for all superficial methods will fail to reach the heart of the matter.[8] To succeed and to guarantee the future of our culture, we must find a way to fully condition the protective responses of the immigrant and of his children.

[8] See Drachsler, *Democracy and Assimilation,* Chapters 1–3.

THE REFLECTIVE RESPONSE

If one should attempt to summarize in small compass the outcome of this chapter, the substance of the summary would be that culture exists because men think as they do. True, we are often admonished that men do a great deal less than think, that they spend most of their time feeling, but so far as we have been able to find out many of the animals are quite occupied with feeling also. However, those who so scornfully reject the idea that it is by thought that man has achieved traits in culture, forget that feeling usually goes with doing something, that it does not stand out alone, and that in the end man can reflect about both feeling and doing. Moreover, while the precise psychological distinction to be made between men and animals is yet to be agreed upon, one may anticipate that innate equipments for reflective thinking are peculiar to man. At least we can be sure that the results of such thinking are not discernible in the acts of animals. So our main thesis is that culture is an accumulative structure developed out of the reflective thinking of men. The mechanism for the exercise of this thinking is a part of every man's inborn equipment and it functions in the way he learns to direct it, or accordingly as he adapts its activities to the culture into which he is born. The accumulation of culture elements, as we have noted, is chiefly the formulation of such reflective activity in terms of speech and objective material manipulations. The close association between speech and thought has always been a puzzle and often leads to such playful remarks as "we think because we speak," "no speech, no thought," etc., but the performances of certain deaf-blind individuals suggest the folly of such conclusions. All we need to set us right is to turn to the genetics of language, for a child soon begins to emit vocal sounds and apparently spontaneously pro-

duces not only vowels, but combinations with consonants. Thus far in his vocal development, the culture into which birth has thrust him has had little to do with the matter, but from this on the linguistic accumulations of his ancestors, no doubt of the whole of mankind, begin to bear upon his special speech mechanism and his thinking equipment, offering ready blazed paths to follow. Further, it is well to note that these paths are not of his making and that he follows them somewhat imperfectly at first, partly according to a trial and error method of reaching precision and partly by his own thought, as in the instances when he invents an original name for something.

Again, while it is true that the child may not necessarily repeat the genetic history of his race in the acquisition of language, there is nevertheless great probability that language was developed along similar lines. The antecedent conditions would be, first, the inborn equipment to produce speech sounds and their combinations; second, the equipment for reflective thinking. It is readily conceivable that the combined functioning of these would produce a language. Yet there are those who deny the validity of such a theory by insisting that the entire language is formed before there is any reflective thought whatever and that long afterward, if at all, men may turn their attention to their speech and its ends. The chief origin of such views is to be found in a valuation of thought. No one doubts that a grammarian comes into existence late in the genetic history of a language, but by reflective thinking we refer only to thinking that follows an act, relative to it or its results. This is the only kind of thinking which can be certainly set down as peculiar to man. It is, therefore, difficult to believe that this form of thinking, however puerile it may seem in contrast to that of a grammarian, was not present at some time when men were exercising their

innate equipment to make vocal sounds in combination and so take the initial step in the accumulation of the elements of a language. That later some primitive genius took a hand at systematizing the speech of his fellows, is to be conceded, for that is what we mean by culture accumulation. So in general, we dissent from the view that language and other traits of culture were well formed and their modes of social functioning established before any kind of reflective thinking was brought to bear upon these acts. The psychological view of man's innate equipment is that he is provided with an indefinite number of mechanisms each of which is tuned to respond to a fairly definite type of situation. Among these mechanisms is that for reflective thinking, as we conceive it here. If the type of action for this mechanism is to reflect upon experiences and it is innate, why does it not act in every normal individual when experiences have been achieved? There is every reason to believe that it does. Thus, the initial step in culture was the response of this mechanism; and it began with the first anthropoids possessing it as an innovation in their inborn equipment.

This rationalization resulting from thought is an aspect of culture accumulation, particularly the phenomenon of acceleration. For example, the science of linguistics, in its broadest sense, is one of the advance guards in culture's onward movement, the final accumulative reflection upon the phenomena of speech. It is a long road backward to the initial step in language formulation, but there is no evidence at hand to indicate that the type of thinking mechanism native to a modern linguistic scientist was not possessed by his earliest ancestors.

On the other hand, the thought basis to other kinds of trait-complexes is less difficult to recognize, especially for such as are universally taken as inventions, since

obviously there can be no such thing as an invention without reflective thought. Religion, however, is sometimes pointed to as something based upon feeling instead of thought, but this cannot be, for without reflection of some kind there could be no such thing as a conception of the supernatural. Further, every ritual, however simple, is in its inception the outcome of reflection upon the relations involved; so even the most spiritual of religious complexes are the outcome of reflective thought. Finally, there seems to be some confusion as to the part played by feeling in religious traits, apparently because one usually thinks of the case as one in which a person acquires his religious culture by borrowing it, instead of creating it anew. Whatever reflective processes one may go through under such circumstances may be inconsequential, but still as an individual he will indulge in some thought. In other words, it is natural to think reflectively. There would be no need for such commonplace remarks if one did not often meet with the assertion that neither intention nor thought played any necessary part in the formation of a culture trait. Usually such statements are safeguarded by holding in reserve a definition that rules out all save exceptional mental processes, but the promulgation of such statements serves to obscure the necessary basic parts the reflective processes play in the manifestation of culture.

Another important point is that there is joy in such thinking, or there is a *drive* behind it. Not infrequently one encounters the view that not a single step in the development of culture is ever taken except under dire compulsion, and accordingly we are expected to imagine our poor primitive ancestors driven to be men instead of mere apes, and proceeding whiningly and tearfully along a tortuous path, taking every opportunity to sneak out of line. But this cannot be a true picture of man

whose dominant characteristic is to accept joyfully the challenge of nature and wrestle exultantly with the problems of the hour. So any view that shuts its eyes to the biological basis for culture and especially to the reflective response, must be inadequate, for then we must conceive of culture as an extra-biological phenomenon that happened to get hitched on to the genus Homo instead of something else. And such, in fact, is the historical explanation theory when carried beyond its depth.

ACQUIRED BEHAVIOR

Under this head we may summarize the preceding discussion, at the outset of which we distinguished between two kinds of human behavior, native and acquired. So far it appears that to the former belong the drives and responses as well as the universal pattern for culture, whereas the concrete facts of tribal cultures, the trait-complexes as we have defined them, are the manifestations of acquired behavior. The conditioning response is one of the type processes by which the individual is adjusted to the culture of the tribe, or by which he acquires these trait-complexes. In other words, he learns to do the things the other members of the tribe do. So when we characterized the specific elements of culture as acquired behavior, we meant nothing more nor less than the habits of response taken on by the individual himself together with those imposed by the tribe. Sociological theories have generally recognized the above facts, but have overemphasized the part of the tribe, even to the extent of attempting to derive the whole of culture from a principle of external control. It is largely due to this that such theories have failed as interpretations of culture. Now since we recognize that there is an urge to invent, that reflection upon acts and observations is likewise spontaneous, not to mention imitation, imparting information, etc., tribal cultures and their complexes

appear as specializations in modes of response. In some respects this tribal specialization is nothing more than a level of uniformity in individual specialization, in so far as the tribesmen have the same habits. Thus, in our examination of culture's content we frequently remarked the small number of traits, or the tendency to overemphasize a single trait-complex and the peculiar way in which this one complex conditioned many other complexes. The basis for this is now clear to us. So, in general, the contents of culture vary because they are in the broadest sense conditioned responses due to environmental and fortuitous causes. Historical methods can do no more than reveal the identity of these causes. On the other hand, in so far as tribal cultures are structurally alike, the causes lie in man's original nature.

Finally, we are now in a position to distinguish between the universal pattern and the conventional tribal pattern concept of ethnologists. The latter is a matter of trait-complex emphasis and grouping, as when one tribal group attempts to fit new elements of culture into a few dominant trait-complexes; the former is the functional pattern for inborn human behavior. The weak point in this presentation is that, for lack of the necessary research, we cannot as yet adequately define, least of all visualize, the universal pattern. The categories and other terms of classification we used in Part II are expressed in terms of culture data, whereas the universal pattern is something of another order, to be defined, if at all, in terms adequate to the expression of biological relations. Hence, it should not be assumed that the facts of culture are inherited, or that the categories we used when considering culture objectively, are themselves integral parts of the germ plasm. For example, no one would contend that specific conventional types of war are to be found in original behavior, but on the other hand, there are many indications that a universal type

of innate response is the basic phenomenon in war, and this may be taken as one unit in the universal pattern of culture.

BIBLIOGRAPHY

Baldwin, James Mark. *Social and Ethical Interpretations in Mental Development.* A Study in Social Psychology. Fourth Edition. New York, 1906.

Bentham, Jeremy. *Introduction to the Principles of Morals and Legislation.* Oxford.

Drachsler, Julius. *Democracy and Assimilation.* The Blending of Immigrant Heritages in America. New York, 1920.

Lowie, Robert H. *Culture and Ethnology.* New York, 1917.

McDougall, William. *Social Psychology.* Boston, 1915.

Paton, Stewart. *Human Behavior in Relation to the Study of Educational, Social, and Ethical Problems.* New York, 1921.

Tarde, Gabriel. *The Laws of Imitation.* Translated by Elsie Clews Parsons. New York, 1903.

Thorndike, Edward L. *The Original Nature of Man.* New York, 1913.

Watson, John B. *Behavior, An Introduction to Comparative Psychology.* New York, 1914.

Watson, John B. and Rayner, Rosalie. *Studies in Infant Psychology* (*The Scientific Monthly,* vol. 13, pp. 493–515, 1921).

Wheeler, William Morton. *Social Life among the Insects* (*The Scientific Monthly,* vol. 14, pp. 497–524; vol. 15. pp. 68–88, 119–131, 235–255, 320–337, 1922).

Woodworth, Robert Sessions. *Dynamic Psychology.* New York, 1918.

CHAPTER XIII

THE INDIVIDUAL AND THE RACE IN CULTURE

In zoological terms the individual is the unit, the group is but a random collection of these units. Also when functionally considered, it is the individual that counts, for in him, and him only, reside the inborn drives, responses, and mechanisms, the objective manifestation of which we speak of as culture. However, those who have read a little in sociological literature will recall that students of that subject distinguish rather sharply between the acts and functions of a tribal group and those of a single person. There are even learned discourses upon the group-mind, sometimes assumed to be super-individual; but in so far as empirical methods go no such mind exists, except as found in the aggregate of individual minds. What seems to be sensed by these advocates of the group-mind is the inborn equipment of the individual for group life, a subject we have considered at some length; but the necessary drives, etc., reside in individuals.

For facts concerning individual minds and the variation of individuals, one from the other, the reader should turn to psychological and educational literature, for both the psychologist and the behaviorist, especially the latter, make the individual their chief concern. The anthropologists, on the other hand, have given little attention to the individual in culture; when they are concerned with him, he is looked upon as a zoological specimen. Nevertheless, his relation to culture has from time to time received notice, particularly when the prob-

lem of the genius and the leader is considered. This point we have touched upon under the head of invention and originality, though further treatment may be found elsewhere.[1]

Turning, then, to the group, or the tribal unit, as we have defined it, there arises an important problem. When at the outset we defined the group, the distinction was entirely one of culture content. So if biologically considered the individual is the unit, then what can be the biological basis for the tribal group? As a method of approach, we may assume either a negative or a positive answer. Thus, enthusiastic students of culture are sometimes inclined to regard the whole tribal assemblage as a phenomenon of culture, a conventional thing, an invention of man himself, or a trait-complex. Yet the usual procedure is to assume that the sexual pair is the nucleus of the biological group and that the tribal group is a trait-complex built around the family. There is an important fact here, for the family is the reproducing group and in so far fundamental; but it is just as hopeless to try to explain the whole of culture by this relation, as it is to base it upon isolated individuals. It is not a family that gives us culture, but a group of families. Further, the tribal group is a breeding group also and, so far as we can see, the primary one, for the bounds to the tribal culture group are also the bounds within which are to be found the individual proximities essential to reproduction. There is, of course, some opportunity for inter-tribal breeding, but this is relatively insignificant, for so far as we can see, the culture complex must be taken in its totality as the expression, if not the actual bond, of the group. Without it, or some inborn mechanism, the family would be the unit and indeed the only group.

In sociological literature we frequently run counter of

[1] Baldwin, *The Individual and Society.*

the idea that the tribal group is one of blood relationship, actual, or theoretical. What is meant is that universally the individuals of the group consider themselves as related by blood. And it is true that, as we have noted, the members of the group regard themselves as one people; but we must not take the statements of a people at their face value, for the reflective response of man comes into play here, also his urge to manipulation. Thus, if we hand a new rattle to a baby in his crib, we note that this object is put through an amazing number of situations; it is fingered, shaken, pounded, tasted, sucked, bitten, passed over the head, feet, and so on. If we hand the same object to a monkey, he too manipulates it, but to a far less extent; he does little more than smell it, bite it, rub it against his body, and then drop it. These facts are of great significance in interpreting culture. We should expect, then, that the biological relation of man, woman, and child would not only come in for a great deal of reflection, but also be subjected to manipulation. In this way we can satisfactorily account for the presence of the multifarious systems of marriage and relationship that make up so large a part of social organization. We must remember, also, that reflections are formulated into explanations; so when a tribe says that they are all of one blood, they are merely offering an explanation as to why they are, as individuals, in a group. This, then, cannot explain the group.

So while the biological basis for the group still eludes us, it is well to view it from the standpoint of culture. Here the group appears as an aggregate of individuals limited in size by its culture and the environment. And one fact stands out clearly in human ecology, viz., that under a given culture the tribal group expands until it reaches the limit of its food supply; then if it does not succumb, or remain static, it evolves new mechanisms for feeding itself and then expands to a still higher

limit, only to repeat the phenomenon once more. To this we have referred before, but we see here how it is that culture sets the bounds to her group. So the proper interpretation of family systems, conceptions of blood descent, etc., is that they are merely trait-complexes within the tribal culture.

However, another kind of explanation has been offered, by conceiving of the tribe as a "pack." [2] To this we shall refer again, for this is in reality a view of man as the human wolf. The implication would be that this pack behavior preceded culture and was essentially innate. If all this is true, then we need look no farther for the biological basis to the group; it also is tucked away in the germ plasm. Yet even so, in the previous chapter, we laid the foundations for an interpretation, for the culture pattern is based upon responses that fit man for group life and to manifest culture, and it is this that defines the group.

THE RACE IN CULTURE

We have now reached a point in the discussion where everyone should watch his step, for it seems that no one can handle the question of race in cold blood. The literature of the subject is unusually tart, bristling with thrusts and counter-thrusts. We find pro-Nordics and anti-Nordics, pro-yellow and anti-yellow, pro-hybrid and anti-hybrid, etc., engaged in a war of words and occasionally of deeds. We find among the fighting hosts distinguished men of science and not a few students of culture. Among the most conspicuous are those who advocate extreme tolerance and assert that race matters not at all. They consider themselves unbiassed and able to take a stand far above the usual level, and yet one often finds them denouncing the pro-Nordic in most

[2] Read, *The Origin of Man and of His Superstitions.*

intemperate fashion and at the same time encouraging the antis. As apostles of peace, tolerance, and equality, they are surprisingly militant, which shows how well nigh impossible it is for anyone to look at this question impersonally, for the moment the subject is broached one instinctively rushes to the defense of his own blood and culture. It is much the same with us as individuals, for though we will agree that there are great differences in abilities and that individuals should be graded and assigned tasks accordingly, yet we always count ourselves out; but the trouble with the race question is that we cannot count our respective antecedents out, nor does the writer claim that he can rise above the universal human to the extent of not showing his teeth.

So it is obvious that the relation between culture and race is a subject of more than passing interest, and though as yet, not seriously investigated, the time is near at hand when its solution must be sought, if life is to be socially rationalized. The point is as to whether the different racial strains have equal efficiency in culture. For example, could the Japanese and Germans change places and things go on as they are? No doubt the first reaction of the average person is that they could not. Again, if we should ask about the Zulu and the French changing places, the mere asking would be something of a shock. These strong reactions should warn us again as to the nature of our responses. Further, there are many serious-minded persons who question the negative answer as not proven. They say that for the Japanese and Germans to truly change places would require each to have the same history and habitat for many centuries, so that each race should have an equal chance to adjust itself to its environment. A little reflection on this point will make even the most intense race-egotist realize that there is still a problem to be solved. Nor is it clear how a satisfactory solution is to be attained.

A large body of literature dealing with the many aspects of race problems has accumulated and while a large part of it can be justly set aside as unscientific and strictly prejudiced, there will remain a respectably large list of titles embodying the serious thought of eminent men, which must be taken as the starting point in every new investigation.[3] From a general survey of this body of thought it appears that a few fundamental lines of approach have developed. First, and perhaps foremost, is the primary question we have cited as to the mutual fitness of different hereditary groups to participate in cultures other than their own. The literature on this problem is largely controversial and specific in that it deals with the single question as to the fitness of all the world's people to participate in the cultures of the Euro-American type. The question is peculiarly American in so far as it concerns the fitness of Africans, Japanese, Chinese, etc., to participate in American culture. Yet, the sober discussion of this point is conditioned by our insight into the relation between the individual and culture; hence the reader should have our previous discussion of this point clearly in mind before attempting to follow the argument here.

Further, for the sake of clearness, we may be reminded that we are now considering the culture abilities or capacities of distinct races and not amalgamation. Amalgamation always comes into mind because the racial contact that spreads culture results in more or less mixture of blood. Hence, we should note that the preceding problem is one of culture and racial culture equipment, in contrast to which we have another problem none the less fundamental, viz., the effects of amalgamation. While it is obvious that these are correlated problems in

[3] Grant, *The Passing of the Great Race;* Boas, *The Mind of Primitive Man;* Johnston, *The Negro in the New World;* McDougall, *Is America Safe for Democracy?* Davenport, *Heredity in Relation to Eugenics.*

that it is legitimate to consider the effects of amalgamation upon culture, such must be secondary to the real problem, for it is in the biological results of amalgamation that the primary problem must be sought. Either of these fundamental problems is amenable to scientific investigation, since in one case we need but observe the cultural reactions and achievements of various people when subjected to the required conditions and in the other to collect data on the somatology and psychology of individuals of mixed parentage.

Another distinction that should be made is between the determined results and effects, as mere observations, and their social desirability. Thus, if it were demonstrated that the amalgamation of negroes and whites resulted in a superior physique or an improved psychological equipment, it would still be legitimate to question the social desirability of such amalgamation. Likewise, if it can be shown that negroes may under favorable conditions play an equal part in the culture of whites, it is yet proper to question the social desirability of such joint participation. Though the previous problems were amenable to scientific treatment, it is doubtful if social desirability is equally so, because it is chiefly a matter of social choice which, in a democracy, means the preferences of a majority of the individuals concerned. In such cases, the only means of scientific investigation required is a ballot. It is clear, then, that in such a discussion as we have in mind, no consideration need be given to the question of social desirability.

Returning now to our first problem as to the ability of different groups to take up strange cultures, we find ourselves facing a complex and very difficult matter requiring for its solution a careful analysis of the evidence for the existence of racial mental differences. This problem is not only analogous to that of individual differences in men, but is in reality a part of the same

problem. Thus, if we take a group of men, say even a selected group like zoologists, we would expect to find considerable range of ability in the performance of any definite task. If we called in an equal number of truck drivers, we would expect them to show like ranges in their group, but also as a group to differ from zoologists. In memory, for example, we should expect every individual to have the power to a normal degree, but nevertheless expect them to show marked differences within the group and likewise the groups to differ.

Those who are familiar with the remarkable advances made by psychologists in the testing and grading of students and particularly in classifications for military service and college admissions, need no argument to prove the reality of individual differences in ability as manifested in the mental processes which underlie culture traits. So far, these tests have not been extensively applied to races; yet, some small attempts have been made, in the results from which there appear appreciable differences. Among the most suggestive bits of such research is a recent report upon the standing of Indian children in intelligence tests, according to which white children not only stand quite above Indian children, but mixed-bloods take an intermediate position. Thus there can be little doubt that there is a real difference between the two races.[4] The results of such tests will soon show how the case stands with the different hereditary groups of mankind. We are aware that there are people who question still the belief that the ranking of individuals in these specific artificial tests will hold for the real tests of life. However, this objection is being met by current events; but our point is that these tests do bring out individual differences that are innate and also tend to reveal group differences of the same character. Thus,

[4] Hunter in the *Journal of Comparative Psychology,* vol. 2, pp. 257–277.

we have strong grounds for the assumption that variability is an observed characteristic of innate qualities, both in regard to individuals and groups.

Again, the mere fact that, though cultures are not innate, the chief producing mechanism *is*, should at once raise a strong presumption that different groups of men will differ, for on what grounds could we expect that in view of all the individual variation we know to exist, large hereditary groups of men would show identical ranges and averages of mentality. Further, it is the hereditary factor and tribal grouping that preclude the condition of random distributions for mental characters and give us what may be considered as selected groups, since in dealing with variable phenomena we know that if individuals are taken at random, or by chance, we may get groups of equal distributions, but the moment we select according to some correlated standards our groups will differ. So, since invention is an innate process, all we need to secure unequal groups is to separate men according to descent; and as what we call races are most surely differentiated by descent, it follows that their innate equipments will differ. Our analysis of culture traits and the unhereditary nature of the traits, show that culture is produced by the functioning of this innate equipment. If it differs, as seems inevitable, then there is no such thing as racial equality in culture.[5]

Those who profess to believe in race equality often evade this point by seeking to minimize the differences. They say that these differences are so small that they cannot be significant. But the same thing is true of individuals, for "Our great men are merely those who do something better than the rest of us who can do that same thing well."

Still other arguments are offered by those who prefer some experimental evidence. Thus, it has been asserted

[5] See Marett, *Anthropology*, chapter on Race.

that when the children of different races are put into the same school they prove equally proficient. This has not been proven, but for the Negro or the Indian to fit himself to live with us, is merely a matter of learning a number of specific new things. Yet, as children in their aboriginal homes, they also must have learned a large number of culture traits. So it seems quite likely that the mere learning of culture traits is a necessary part of child life everywhere and that the traits taught in our elementary schools can be readily learned by all normal children of every race. In like manner, it can be claimed that even the adults of the several races learn new traits readily. We often meet the argument that since the Japanese have been able to quickly take up many traits of European culture, Negroes and Indians in America have done the same, etc., it follows that all races of men are equally competent. If we return to our previous discussion, we see that the question in this form simply asserts the possibility of any human being, if taken in the formative period, acquiring the essential traits of our culture. And there is every reason to believe that the Australians, for instance, could be taught to become citizens, if we took them in time. It is said that in Arctic countries untutored Eskimo are quickly taught even such technical matters as the operation of a gasoline engine. Also, we may be reminded of the success of European countries in training natives as soldiers. In fact, the whole known history of European nations is a record of the extension of their cultures by teaching, in one way or another, the essential traits to barbarians. Yet, this is not the point, for the real question is, are all of these "barbarians" equally competent to invent fundamental traits and to advance culture in a decisive manner? We do not see that the above citations, even if true, have any particular bearing upon this point.

What people acquire in this way is largely a series of complex habits, like writing, reading, social usage, etc., whereas what we are really concerned with now is the creation and development of new culture traits.

Even here we must be reminded that all people can invent and that it is merely a question of relative degrees of success we are considering, not failures. Moreover, there is no good reason to believe that the inventive powers of men are equal, but every reason to expect differences, and these differences would tend to unequalize the progress of various peoples even when taking over the culture of another, because some adjustments must be made which by the very nature of things call for a modicum of originality, at least. The Japanese, for example, seem to have done very well, but could the Eskimo, Negro, Indian, or Malay do it equally well?

Again, when one offers the objection that, at least, the other races have not met the test of actual life and that it is precisely in western Europe that modern culture originated; the advocates of race equality at once plead that no other race had an equal chance with the Europeans. The inconsistency of this position appears when we carry it over to individuals. It is scarcely ever maintained now that individual differences in performances or work, are wholly due to unequal opportunities and that if these could be made the same for all, we should have one dead level of uniformity, for we now know that there are innate capacities that differentiate individuals. When by the same reasoning one seeks to ignore the obvious differences in the performances of natives as due to lack of opportunity, he is on equally precarious ground. The one stubborn fact, that as they stand today the nations of the world show great inequalities, may be obscured by such remarks, but surely not in the least explained.

When one begins the serious study of any people other than his own, particularly those we call primitive, he is certain to be greatly surprised at the vast store of technical knowledge and ingenuity exercised in the pursuit of their daily routine. This discovery awakens a deep interest in the people, from which the student passes into a sympathetic attitude, and from which point of view he tends to exaggerate the traits of primitive life. This is quite noticeable among anthropologists who work so intently with the less civilized that out of pure interest and loyalty they come to rate primitive innate qualities much too high. No one doubts the human attributes of these primitive peoples or that we may find among them likable personalities; they do think and feel just about as we do, but there are reasons, as we have labored to show, why the various groups of mankind should differ in a manner analogous to individuals among us. So allowance must be made for the bias of anthropologists, among whom we find some of the strongest champions for race equality in culture. Further, in but few cases are we able to compare accurately the performances of primitive and modern men. Perhaps one of the best opportunities lies in archery. Among Englishmen and Americans archery has survived as a sport only, but the curious thing is that the quality and skill of shooting so developed exceeds that of anything we know among primitive or older historical peoples. In case of the famous last wild Indian of California who died in 1916, we had a fair chance to try out an American against an Indian. It happened that Mr. Saxton T. Pope, a student of archery, made a careful study of this Indian's shooting, and notwithstanding that the Indian had lived all his life by hunting with a bow, Pope soon came to outshoot him. This, he concluded, was not because he had greater inherent capacity for skill, but because his methods of dealing with such situations

were superior to those of the Indian.[6] It is true that this Indian had a fine and rich technique of archery, but there were many important problems he had never solved. For example, he did not know that the arrow revolved in its flight and so like many other people tried to place the flat arrow-head in such a position that it would readily pass between the ribs of the animal shot at. Again, it is superiority of method that has enabled the modern sport of archery to far surpass the real archery of a few centuries ago. No doubt we have here the kernel of the whole matter, as those people are superior in culture who have devised superior methods of dealing with situations. Hence, the chances are that mankind differ little in their abilities to acquire complex habits of manipulation and that where their methods are equal these performances will rank in skill according to such finer individual and group differences as may exist.

Some anthropologists seek to demonstrate the general psychical similarity of all mankind, asserting that this will go far toward proving general equality in culture under like external conditions. One point upon which they lay great stress is the unusual power of inhibition and self-control sometimes displayed by primitive men. In the first place, it is not difficult to show that the gross degrees of inhibition may be similar for all and that we may dismiss all the random observations of early observers as to the lack of interest, power of attention, etc., attributed to more primitive men as based upon faulty methods of observation. This anthropologists have done very effectively.[7] But when considering these examples of inhibition, attention, etc., some also raise the question of originality, or inventiveness, yet

[6] See Pope in the *University of California Publications in American Archaeology and Ethnology*, vol. 13, pp. 103–152.

[7] Boas, *The Mind of Primitive Man.*

are content with citing a few examples of religious movements like the Ghost Dance of the Plains Indians and minimizing the originality of individuals among us. Hence, this, which is what we have designated as the fundamental problem in the case, remains unanswered. And it is well to note that the anthropologists are dealing with the gross common factors in the mental life of man. Thus, as we have noted in a preceding section all men have speech, and a cursory view of typical languages at once makes clear that the general mechanism of thought must be the same everywhere. No one denies that primitive men seem to see, feel, hear, remember, attend, inhibit, imagine, strive, etc., so far as the qualitative aspects of these activities go, precisely as we do. We should expect also that primitive man will show considerable power of inhibition, interest, etc., since these are necessary factors in the functioning of mental life, and as we have pointed out more than once, the peoples of the world differ largely in the directions of inhibition, which are in turn determined by traits of culture; but no data that have been brought forward in such discussions in any way offer an answer to the question as to the relative innate powers of inhibition or capacity for the development of inhibitory reactions. Thus, the argument based upon inhibition takes us no further than the other arguments we have reviewed. In no case do they furnish good reasons for doubting the existence of racial individualities.

While, as stated at the outset, there is probably no way to test conclusively comparative racial abilities except by actual trial, that is quite impossible. Even parallel examples fail us because the conditions are never quite duplicated. The nearest we come to it is in the New World and the Old before the Columbian Era, in 1492, to which we have referred too often already. Here, so far as we can see, the two halves of the world did

achieve many similar things, as writing, agriculture, bronze, loom weaving, etc. Yet, no one will for a moment contend that equal progress had been made, for the methods of Europe were certainly superior to those of Mexico or Peru. Still it must be admitted that even this is not altogether a fair test, for though the Indian had his chance, the only fair thing would have been for the races to have changed places, because we have shown how accumulatively complex all culture processes are, whence it follows that Euro-American culture was not by any means an independent structure, and even in this case we may be practically certain that neither Teuton, Saxon, nor Briton could have done it alone. What they really did was to grasp right and left from the specific cultures of the whole Old World such traits as could be used in building up and devising original increments to their own fundamental cultures. It is the suggestiveness and stimulus of the great range of the Old World's achievements that appear as the prime condition of Euro-American achievement. Not even bronze, iron, silk, gunpowder, glass, and printing can be claimed as originating among the three leading peoples of western Europe. Yet they have exploited them to the utmost.

Our purpose, then, in this long discussion has been to show that there are indirect evidences of racial inequality. These differences may be small or great, according to how we choose our standards of value, but we see no reason to doubt that they are real. In conclusion, however, it should be noted that we have so far concerned ourselves only with the existence of differences in the innate life equipments of the several groups of mankind. This we think sufficiently evident as a logical corollary to the observed conditions, but unfortunately for us it does not specify differences nor give their significance in the pursuit of culture. So we can only

say that the groups of mankind are not equally equipped. As to which are superior, we can judge only by what they have accomplished. This is largely a matter of values. Nevertheless, in the same sense as the individual counts, that one man is not as good as another, so the race counts.

EXPLANATIONS FOR RACIAL DIFFERENCES IN TERMS OF CULTURE

To the man in the street all national and cultural characters are inborn. It is this naïve way of attributing everything to blood that shocks the anthropologist and the sociologist, for the facts are that a great deal can be accounted for as merely a matter of culture. This we must not forget. A little reflection will show that in some cases peoples have made great changes in culture without losing their blood, and in such instances, it is quite inconceivable that there has been any essential change in the innate equipment of the people involved. The real problem, therefore, is as to the identity of the racial traits that accelerate or retard culture. We can safely say that no one has made even a beginning toward the solution of this problem; in fact, the question has not been clearly formulated. The only progress made has been in clearing away some of the naïve assumptions we have just noted.

At this late day evolution as an explanation of the many forms of life is taken as a matter of course. The building up of human culture, as we have outlined it, is also considered a manifestation of the evolutionary process, and to the critically inclined, the evidence for the evolution of culture is ever so much stronger than for organic evolution. We once heard a great preacher say that if the facts of animal life did not prove evolution, the history of Christian doctrine did, for no one could face the facts and deny that there had been a

steady and unceasing evolution in the basic Christian concepts. In this discussion, we are ready to go a step farther and say that there is no chance for doubt that the history of culture is a story of evolution. It is, however, *an* evolution and not simply *the* evolution. Here is where we all, to the chagrin of the learned, make the naïve assumption that it is all part of one process, for the average individual thinks of evolution as a sequence at the top of which stands Euro-American culture and at the bottom mere protoplasm. To him, the term stands for the one grand process of which a particular type of culture is the goal. He conceives that the whole world has been laboring toward this end for millions and millions of years.

The reader who has followed us through these pages is now in a position to deal with this erroneous idea. The evolution the zoologists talk about is based upon inheritance and so is a matter of germ plasm. On the other hand, culture as we have defined it is not inherited and so cannot have the same kind of an evolution. This is no doubt plain, but we are still far from a final answer as to the relation of one to the other. There are many serious-minded persons who assume that the evolution of culture and the evolution of men must go hand in hand. If this view is carried to its logical consequences, it would require that every important advance in culture be accompanied by an advance in the nervous system. Thus it is conceived that man began with a crude nerve structure, with a crude mind, to use the rudest make-believe of tools, and to practice the simplest conceivable culture; but that little by little the complexity of the nervous equipment increased and that hand in hand with that went an upward trend in culture. In short, it is somewhat naïvely assumed that the advance in culture is part and parcel of an advance in hereditary structure. So extremely stated, the view is clearly untenable. In

the first place, changes in culture are too frequent to be correlated with morphological changes and are also too erratic. Cases may be cited in which individuals formerly savage acquired the elements of modern European culture, whence it is evident that no important morphological changes could have taken place to serve as the basis for this new cultural acquisition. On the other hand, it may be urged that we are here flying in the face of the facts, for do we not know that animals may be greatly improved by the breed? And can it be shown that man, by the law of survival, has gone on rising toward the goal of the highest conceivable culture by any other means than wavering gains in the kind and quality of his innate equipment? Can it be shown that there is any reason to doubt but that by such variation there has been a more or less steady increase in the efficiency of man's biological equipment? All this may be true, but we should be clear as to what we are talking about. Eugenics is a fact. The experience of the world attests it, at least among horses, dogs, etc. By human agencies or otherwise it has come to pass that we have horses of many sizes and colors, fast and slow, strong and frail; but after all, they are horses. Those primitive men of Europe in the long ago, some of whom lived in caves, have left us spirited drawings of the horse, which show how little he has changed. From somewhat after that day to this, man has been busy shaping and selecting his horses, but their germ plasm is ultra-conservative. Likewise the dog. Though for untold ages he has been bred, he still has the bark and the wag of the tail. In the germ plasm of the horse is something that stands for horse nature, that defies elimination; likewise in the dog. You can twist this, shape it somewhat, but that is all; so in human germ plasm is something that stands for human nature, culture production, and this is far and away one of the most conservative and stubborn

qualities in the world. It is true that eugenics may account for certain differences in man's cultural capacity, but such are only variations within the pattern; it cannot reduce men to barking nor equip dogs for culture—at least, the experience of the world is so far against it.

Now the biological theory of evolution accounts for the origin of this culture producing capacity in man. There it stops; for as we have said over and over again, the biologist deals with inheritance. The anthropologist now comes forward with his view of culture and he feels confident that he can account for the whole result if given creatures with an innate equipment to produce cultures. So far as he is concerned, from that far distant day to this, no qualitative changes need have occurred in man to account for the facts in the history of culture. Let us see what all this implies.

If we turn to the earliest known culture of man, the first definite stone age of Palaeolithic Europe, we find man chipping stones into tools of fixed forms and using fire. A little later we find him able to draw remarkable pictures upon the rock walls of caves. Between these pictures and those drawn today we see no differences to warrant the assumption that the mental processes back of the cave artist's hand were of a different kind from those back of a modern drawing. No one would venture to say that the cave paintings were made by instinct, or that the ability to do them was inborn. But the conditions are just the same when we consider the flaking of stone. Hence, we must assume that cave man was already producing a culture by reflecting upon experiences and directing his activities accordingly. In other words, the rationalizing process had set in. Now the question is, if culture is an accumulation of these rationalizations and the habits of action they stimulate, is anything more necessary? In other words, is it necessary that the innate equipment of modern man be of a

different quality from that of cave man? Most students of psychology and anthropology say there is no necessity for a change. If this is correct, there has been no important step in the evolution of the human nervous system since the first appearance of the modern type of man in Europe.

In the preceding chapter we went somewhat out of the way to find reasons for the belief that men were far from alike in the efficiencies of their nervous systems. At first sight, this may seem contradictory, but it will be recalled that our attention was then fixed upon the degree of efficiency manifested in the inborn equipment and not upon its completeness. What we are now asking is whether all the equipment units were present in cave man. This we have answered in our discussions of the culture pattern, where it appeared that the facts of culture show a necessity for their united presence at that early day. What we suspect is that the first man was he who first had this complete equipment and that it was the last unit added by evolution that made culture possible. This was probably no more than the ability to think, or as we have loosely used the term, to reflect over acts and experiences.

In a former connection we stated that modern man is superior in archery because his methods are better. So it may be that modern man is a better thinker than the cave man because he has better methods of thought. But these methods are parts of culture and are arrived at just as other culture traits are. The racial differences we found evidence for are variations in the efficiency of man's nervous machinery by which some can use these methods more effectively than others. In short, there appear no good reasons for assuming that man's nervous system has evolved along lines parallel to the evolution of culture. One is man-made, the other is not. Hence, they are not complementary in the biological sense. In

our sketch of culture's essential pattern, we failed to find evidence that new categories had been added to this pattern at any time and so concluded that the pattern had not changed. What may have happened are shifts and changes in the germ plasm to correspond to ranges of individual and group abilities. Thus it is quite possible that some groups of mankind have by biological evolution come to excel others in quickness, accuracy, and the intensity of response. They may also have come to inherit more energetic drives. Once before we called attention to the great number of responses an infant makes in contrast to a monkey and there is reason to believe that analogous differences are to be found between the infants of racial groups. Changes of this kind may have come since cave days and may be under way still, but these do not modify the universal culture pattern. They may, however, be responsible for variations in the content of cultures.

The inferences to be drawn from the foregoing are that a very large part of what appear as differences in cultural achievement can be satisfactorily explained as the outcome of combinations between the environment and culture processes. In other words, something of the same kind might be expected even with a constant human factor. Yet, this should not be taken for the last word in the matter, because the human factor is not a constant, but a variable. Hence, if the conditions were reversed, and the environment taken as a constant, there is still reason to expect disparity in cultures, for the truth of the matter seems to be that any given type of culture is a resultant of two variables, race and environment. From this there seems no escape, but a vast deal of painstaking research must be carried through before the respective factors in these two variables can be relatively weighted.

BIBLIOGRAPHY

BALDWIN, JAMES MARK. *The Individual and Society.* Boston, 1910.

BOAS, FRANZ. *The Mind of Primitive Man.* New York, 1911.

CONKLIN, EDWIN GRANT. *The Direction of Human Evolution.* New York, 1921.

DAVENPORT, CHARLES B. *Heredity in Relation to Eugenics.* New York, 1911.

GRANT, MADISON. *The Passing of the Great Race,* or, The Racial Basis of European History. (Fourth Revised Edition with a Documentary Supplement, with Prefaces by Henry Fairfield Osborn.) New York, 1921.

HOLMES, S. J. *The Trend of the Race.* New York, 1921.

HUNTER, WALTER S. *The Relation of Degree of Indian Blood to Score on the Otis Intelligence Test* (*The Journal of Comparative Psychology,* vol 2, pp. 257–277, 1922).

JOHNSTON, SIR HARRY H. *The Negro in the New World.* London, 1910.

MARETT, R. R. *Anthropology.* New York, no date.

MCDOUGALL, WILLIAM. *Is America Safe for Democracy?* New York, 1921.

POPE, SAXTON T. *Yahi Archery* (University of California Publications in American Archaeology and Ethnology, vol. 13, no. 3, pp. 103–152, 1918).

READ, CARVETH. *The Origin of Man and of his Superstitions.* Cambridge, 1920.

CHAPTER XIV

THE DOMESTICATION OF MAN AND ITS CONSEQUENCES

Looking at men from the anthropological point of view, one is often struck by their resemblances to domestic animals, such as the dog, horse, chicken, etc. Dogs, for example, are of great variety and yet so closely related to each other and to certain other canines that they will cross, or hybridize, using that term in a general sense. No one has yet been able to prove fully the origin of the dog either as a hybrid or as a single wild species. There are, of course, a few theories such as the jackal, the wolf, the wild dog, etc., but none of these have supporting data sufficient to give them even relative certainty. The latest student of the subject, G. M. Allen, states that:

> Recent careful studies of the teeth indicate that the domestic dog's relationship is with the wolves rather than with the groups of canids represented by coyote, jackal, or fox. The ultimate wolf-like ancestor of the dog is yet to be determined, but present evidence favors the view that it was not one of the large circumboreal wolves, but possibly a distinct and smaller species, from which both large and small breeds of dogs have been derived.[1]

In short, the difficulty with the dog seems to be that he is a hybrid, whose strains have crossed back and forth to such a degree that his ancestral history is not a tree, but a mass of snarled, tangled threads. Thus, it is not strange that we have difficulty in tracing out the wild

[1] *Bulletin of the Museum of Comparative Zoology, Harvard College,* vol. 63, no. 9.

ancestors of the dog, or even the ancestral hybrid for any well-known type of dog. Again, we see a close parallel in the facts that all dogs and many of the canines will cross, for all the known varieties of men in the world will also cross. So the resemblance we see between dogs and men may be expressed by saying that both are hybrid stocks. And anyone who turns to anthropological literature for a classification of the people of the world based upon relationship and descent, will at once be made aware of our ignorance; for our knowledge on this point is just about as unsatisfactory as our knowledge of dogs. Take the Eskimo, for example: they have some resemblance to north Asiatics, some to Indian tribes, and some striking individualities; but none of these are so plain and undebatable as to reveal their ancestral origin, except in the vaguest terms. So we say that along with most Asiatics and all Indians of North and South America, they belong to the great mongoloid division of humankind, which is about the same as saying that the dogs, wolves, etc., are one great division of the canines. In short, while we are accustomed to speak of *our* family tree, it also is something of a myth.

By this little biological excursion, then, we are prepared to accept the view that from a biological point of regard man is a hybrid complex, and that our favorite term *race* is one of uncertain import. One may suspect, however, that this extensive hybridization did not prevail in that uncertain dawn when the native equipment for culture was being incubated. In case of the dog, it is clear that the artificial breeding conditions of the domestic state are in the main responsible for the present condition. Likewise, it may well be, that in a state of nature, man was less given to mixing his descent, but that later in the age of culture, where breeding conditions are artificial, the procedure was not unlike what we see among the domestic animals.

But looking at culture in its broadest aspects, we see further significance in the domestication concept. The breaking in of the young to the régime of the group is a taming process, often noted in folk thought, as "to lay on the yoke." No doubt this expression was first coined some ten thousand years ago by a philosopher of early plough culture, yet it still fits the case. Further, cultures evolve specific complexes which not only direct the acts of the individual but set up positive limitations. Though it is not clear that this régime changes the fundamental constituents of man's germ plasm, it does modify his behavior. This is what is most often meant by civilization, the taming of a would-be savage.

Man, then, is a self-domesticated animal, and since we have found culture to be based upon an inborn equipment, we may go farther, and say that he is self-domesticated by means of his original nature. So the problem that now confronts us is to estimate the part this domestication has played in man's biological history. There may be, as it were, a back-kick in culture, that speeds the evolution of his native talents.

THE PROTO-CULTURE PERIOD

We can best approach the problem just formulated by seeking the biological background to culture. So far we have avoided the question as to how the native equipment of man evolved, preferring to take its existence as a fact. We shall still maintain this attitude and would pass directly to the evolutionary history of man as revealed by his culture, if there had not been offered some substantial theories as to the proto-culture period. Of these our attention can best be given to the idea that man was previously a "hunting pack." [2] In brief, it is assumed that an anthropoid group, living on fruits and

[2] Read, *The Origin of Man and his Superstitions;* Gomme in the *Journal of the Anthropological Institute of Great Britain and Ireland,* vol. 17.

vegetables, changed into a pack of hunters, and eventually became the first men.

Several propositions are incorporated into this theory, among the most important of which are: (*a*) man is by nature a vegetarian; (*b*) the proto-culture period was an age of pack behavior; (*c*) the earlier types of culture were based upon hunting complexes.

Beginning with what lies nearest our present interest, we are reminded of the chronological schemes for both the Old and New worlds in which hunting cultures are assumed to underlie the whole series, and indeed held undisputed sway in many parts of both hemispheres as late as the nineteenth century. The palaeolithic cultures of Europe were also of this type. In more recent times, and perhaps always, the great tundra and jungle zones, as we defined them, were also the homes of hunting cultures. So the tendency is to regard such a hunting existence as the primal one and to assume that it evolved and spread from a central area to the ends of the earth; then, after a great lapse of time, it is assumed that some genius hit upon the idea of domesticating plants and animals, but that even then culture had reached so hoary an age that man's new rôle as a farmer may still be taken as an innovation. The general scheme for this theory would then be: (*a*) many hundreds of centuries in which hunting was carried on by a wild human pack; (*b*) another very long period in which we find true men with hunting cultures in which the tribe takes the place of the pack; (*c*) a distinctly modern period in which hunting cultures are being displaced by agriculturists.

As a general scheme this has plausibility, for as we have seen, everything of this kind must be based upon facts of distribution and sequence, and in the main these are consistent with the two last statements. Yet, there is one feature of this distribution that is usually over-

looked. Not all parts of the world are equally adapted to agriculture, and there are large areas in which, except under present Euro-American conditions, only hunting cultures are possible. So the situation is rather complicated and not susceptible to an easy explanation. Moreover, we know of nothing to make it impossible for an agricultural tribe to migrate to a non-agricultural region; and even if there were such obstacles, there are not wanting evidences that in the past, climatic shifts have accomplished like results by changing the environment. We need but recall our previous discussions of culture processes to imagine what would happen under such conditions. In other words, man may have been essentially vegetarian and then agricultural, but by expansion colonized the less favorable regions as a hunter. We do not know this to be true, but its obvious naturalness should make us duly cautious of other theories.

Another ground for caution is that neither man nor any of his supposed anthropoid relatives have specialized as carnivores. Had man, as an animal, passed through a long period in a carnivorous pack, we should expect specific morphological adaptations; whereas he stands today still equipped primarily for a diet of vegetables and the simpler forms of animal life. So the probabilities favor the appearance of culture on this old anthropoid level of which the behavior of the gorilla may be taken as a type. And it seems far more in harmony with all we have developed in these pages to assume that no essential change came until the appearance of the native equipments for culture. There is no need, then, of creating such a biological monstrosity as a pack of would-be carnivorous monkeys, who are just as difficult to get rid of in the end, for the transition from such a pack to man is far from self-evident. Moreover, it is the same old problem in disguise, viz., how nature managed to achieve her masterpiece.

This position is slightly reinforced from an unexpected quarter. There is an old tradition in science, that woman is conservative, or lags behind in all matters of progress, and though the idea is very unpopular in these feministic times, it has a certain validity in culture. Thus it is not the woman who hunts or goes to war. Even in the hunting cultures that have survived, she forages about for vegetables and fruits and also reduces the game of the hunter to an analogous state for eating. Many have sought to explain this as a biological matter, but without success. On the other hand, there is little difficulty in explaining it as a matter of culture, for the pack-hunting that figures in the theory, is the hunting party of men, a culture trait-complex that grew up just like any other element of culture. We may look to it as a parent complex to explain certain other complexes in any given culture, but not as the sole incubator of the human mind. For reasons not to be considered here, woman continued to hunt for roots, berries, shell-fish, and the like, while her consort pursued the reindeer, the bison, and their kind. But she also had the biological equipment that made her human, and did not stand still, but fared forth, armed with the digging stick and the basket. So it is quite probable that she did follow the more conservative course by elaborating the old prehuman diet, and by thus ensuring her consort a square meal, gave him the gambler's chance. If, however, both she and the man had descended from the hunting pack, why should we find the women of all hunters so industriously foraging for roots, for in the animal pack, the sexes run together.

So both the data of culture and human zoology suggest that man was previously a vegetarian, that hunting developed as a special food complex according to environmental conditions, and that there is good reason to expect that on the *mesa,* man's natural home, the

transition from plant gathering to agriculture was easy and direct; in fact the most natural thing in culture. It is doubtful, then, if hunting is the primal state of man; rather do we see it as regional specialization, or as an adjustment to environment.

In brief, then, the theories cited offer no aid in our search for the proto-culture period. We have only come back once more to the trite statement that culture came on the scene. Nor can we expect farther insight until the fundamental genetic problems of the biological sciences are solved. So the biological consequences of culture are to be sought in the observed correlations between human groups and their achievements.

THE CONSEQUENCES

A distinguished anthropologist has recently commented upon the biological history of man in a most entertaining way.[3] The great difference between man and the animals, as he sees it, is not merely in the use of tools, but in that man makes his adaptations to new situations by an external mechanism, whereas the proverbial animal way is to make a tool out of a part of his body. Thus some developed their skins into armor-plate, the feet into oars, a bunch of hair into a horn, etc. Man, on the other hand, made a detached member, or a tool, which he could put on and off at will. Thus man soon became infinitely richer than his brothers and far more indifferent to the environment. This author further assumes that once man came by this tool-making response, or his mind, his body became indifferent to changes in the world without and so ceased to evolute. If this is true, then it would follow that the man of today has little more than the same old body that once went about scratching up roots and plucking fruit from the bushes, but to which he has attached all sorts of wires

[3] Crawford, O. G. S., *Man and his Past.*

and buttons that enable him to turn over mountains and to snatch infinite power from the heavens. No doubt this idea can be carried too far, but there is a profound truth here and the way in which man thus protects himself from the immediate shifts of the environment is by invention and the evolving of trait-complexes, or by culture. Thus, the somewhat puzzling fact that there has been no great change in man's body since palaeolithic times, is at least consistent with this view, suggesting that one effect of culture has been to stabilize structure. Yet this must not be over-rated, for if we are right in assuming that an analogy exists between domestic animals and man, then we should expect a wide range of variation.

The important fact in all domestication is selective breeding. This principle must have been recognized very early in the process, and so was always more or less operative. Essentially it amounts to this, the limitation of the number of males, though the undesirables of either sex will be sacrificed. Thus a single horse of exceptional qualities is made the sire of hundreds, and whereas in a wild herd his descendants would be crossed and re-crossed, in the stable his place is taken by a picked representative. Now, so far, there is little evidence that an analogous condition accompanies culture, but rather the opposite. On the other hand, if we regard mankind as a whole, it appears that the culture groups will bring about inbreeding, and so give opportunity for a great number of strains. It is not strange then, that these tribal groups show bodily similarities of the kind we speak of as family resemblances, and indeed they are the same kind of variations. Under primitive conditions such groups rarely exceed five hundred persons and a very large percentage of the marriages are *in,* not *out.* Naturally, then, there would develop a tribal resemblance similar to that in a large English family. It then follows

that the puzzling variety we now find in racial groups is a result of culture, or as we have said, man's self-domestication. The process is not, however, steadily continuous, for, as we have seen, culture processes run in cycles, from small tribal groups to those of national levels, which widens the range of marriage and so tends to level all these differences down once more. Thus, what is happening in Euro-American cultures is much the same as when a number of different kinds of horses are turned out to run wild. But turning back to the more primitive conditions, it seems possible to account for all the modern races of man by differentiation within culture groups, large and small, even upon the basis of the slender knowledge of genetics we now possess. The old lines of cleavage we discussed in an earlier chapter do give us many of the gross distinctions in color, hair, and bodily proportions. Also, there are not wanting evidences in animals that mutations in any of these can arise without otherwise disturbing the biological balance of the species. So could have arisen blondness, beards, the eye-fold, kinky hair, etc., independent of any pre-human condition. So after all, man as a domestic animal seems to bear in his own person, something like what he has imposed upon the dog, horse, ox, pig, etc.

But so far we have been dodging the issue, for if man has hit upon the unique plan of tools as artificial limbs, then it is not his body that is confronted with new conditions so much as his nervous system, or his mental equipment. While there is no very certain knowledge as to what domestication has done to the native behavior of animals, the objective results are plain; different breeds of dogs, for example, show different responses to the same situations. The difficulty in interpreting them, however, is quite like that in considerations of race and culture, for the animal is subjected to a certain amount of training. Yet, as to man, we may

expect that the tribal grouping will, as we have stated elsewhere, result in a range of group differences as defined by psychologists. These, then, whatever they turn out to be, will have resulted from the same domestication, which set the stage for bodily differentiation. Undoubtedly, it is here that research is the most needed, and the line of approach is by a study of domestic animals as well as of man himself.

When we, as individuals, are possessed of many new tools and use them effectively, our internal equipment seems to gradually tense and speed up, so that after a time we find it possible to do vastly more work than before. This familiar adaptation of our nervous-mental equipment does not affect the germ plasm immediately, so far as we know. Yet biologists think there are roundabout ways by which men may come to have a native equipment better adapted to these new conditions. Undoubtedly, the development of fine hunting complexes gave the males of palaeolithic time new mental settings, and we take it for granted that the high tensions of the chase led to a habit of energetic response to other situations. This must have put a new strain on the nervous mechanism. So we are constrained to assume either, that from the start man's native equipment was what it is now, or that there have been adaptive modifications. This is again the old question of race and culture, as seen from a new angle, and while a strong case can be made for mere acquired individual adaptation, the evidence upon which this is based goes back little farther than classical times. True, we were able to trace the pattern of culture back to early palaeolithic time, but it may be, for all that, that an average modern Euro-American can rise to levels only reached by a single genius in Aurignacian time. If it does so turn out, much of the credit for this advance will go to human domestication.

BIBLIOGRAPHY

ALLEN, GLOVER M. *Dogs of the American Aborigines* (Bulletin, Museum of Comparative Zoology, Harvard College, vol. 63, no. 9, 1920).

ATKINSON, J. J. *Primal Law.* New York, 1903.

CRAWFORD, O. G. S. *Man and His Past.* Oxford University Press, 1921.

GOMME, G. L. On the Evidence for McLennan's Theory of the Primitive Human Horde (*Journal of the Anthropological Institute of Great Britain and Ireland,* vol. 17, pp. 118–133, London, 1888).

CHAPTER XV

THE ENVIRONMENT

MANY times in these pages we have noted adaptations of man's behavior to his environment. In the earlier chapters we gave considerable attention to the relation of culture to geography, and we have seen how specific trait-complexes were often based upon natural resources and climatic conditions. This need not be summarized here, but since volumes have been written on environment as a factor in the organic life of the world, and since the advocates of racial and individual equalities insist that the environment is the chief offender, which, like the supernatural trickster in primitive folklore, has had its way by stacking the cards against the good intentions of the Creator, we must turn to its consideration once more. As we saw in the last chapter how culture manipulated the propagation of men, so it may be that the environment also can directly reach man's nervous and mental machinery.

For one thing, we have the biochemical point of view. The great progress now being made in the study of ductless glands and internal secretions raises the hope that we may soon be able to single out the specific compounds that control growth and function. Thus iodine is a suspected factor in the functioning of the thyroid, from which it follows that a change in the iodine content of the environment could modify stature, and even certain circulatory functions. However this may be, the suggestion is that the tone of life in man may fluctuate with changes in the environment, not unlike the performance of a barometer. Thus, it will be said that one

people lives under an unfavorable climate, another among a poor fauna, etc., and so we may expect culture to develop accordingly. But if this were true, it would not be qualitative differences in culture that correlated with degrees of nutrition, but degrees in cultural activity. What we mean is that cultures are usually classified and valued according to their qualitative differences. Thus Eskimo culture differs from ours, for one thing, in the use of a snowhouse. The distinction is here one of kind rather than degree. Further, while it is conceivable that fluctuations in degrees of solar heat may be correlated with degrees of housing, such degrees are difficult to conceive and, in any event, are not the tangible characteristics of culture. Again, it may be objected that if we took the consumption of meat, we could establish a difference in Eskimo culture that would be clearly a matter of degree. In so far as we measure the Eskimo against ourselves this may hold, but when the Indians of our western plains were in their prime they also lived upon the flesh of the buffalo to a degree not appreciably less than did the Eskimo upon sea mammals. Other examples could be cited, showing how difficult it would be to discriminate between culture by degrees of valuation on the one hand and those of quantity on the other. While it may well be that to a certain extent the mere intensity of cultural activity rises and falls with nutritive fluctuations, this may conceivably occur with any of the qualitative types of culture known in the world and so in the long run should affect all alike. Yet, we must not overlook the fact that in this connection our way of sensing the environment in which a culture lies is also qualitative. Thus, we say that the North Pacific Coast of America afforded the Indian fish food in the salmon, while the South Pacific gave wild seeds and herbs. Still, there is no reason at hand for believing that an individual in one was any better fed than in the other, for

it stands to reason that one may be well nourished whether upon fish, roots, or beasts. So the up-shot of the matter is that in this question of culture and environment we must deal with qualitative comparisons.

It would seem, then, that the dependence of man upon nature must be taken as one of the normal conditions of human life and should not be dragged into a discussion of culture and environment. The normal biological conditions for culture must exist everywhere, else there will be no culture, and such fluctuations as may occur in these conditions will not affect the qualitative aspects of the cultures concerned. There is, however, another aspect to the biological problem, for it is an accepted principle that the environment does lead to organic modification. Yet, though biologists are quite convinced of this, they have the greatest difficulty in laying their hands upon indisputable cases. Experimenting is not impossible, but usually impracticable. Perhaps one of the clearest examples is that of the English sparrow which was introduced from England into America, where it has thrived to an amazing degree and is now found in all parts of the United States. All this occurred within the memory of the oldest inhabitant, but already we find striking differences in size and plumage between the sparrows of the Pacific Coast and those of New York. In such cases there can be no doubt but that the environment is one of the primary factors, if not indeed the only factor. Now, while experiments of this kind are rare there are at hand many instances in which variations of the species characters in mammals, birds, and fishes have a distribution synchronous with environmental variations, and biologists feel that they have a right to interpret these facts as evidence for the power of the environment, or the world without, to bring about changes of an organic nature.

Such a conclusion has a peculiar significance to our

inquiry, for, if we observe changes in animal life which can be traced to the environment, the probability that man may come under the influence of these same forces is thereby rendered too great to be ignored. In fact, there is almost as good proof for man as for the sparrow, since the spread of our ancestors over North America and the still steady stream of immigrants passing through New York results in a similar distribution of European peoples and though we cannot often experiment with human beings, here is an experiment of huge proportions. It came about that some years ago a distinguished anthropologist hit upon the idea of rounding up in America the descendants of the foreign born and comparing them with their parents.[1] The result was rather startling, for in matters of head form there were clear-cut differences between the parents who grew up in Europe and their children who were born here. For example, the longer-headed parents of European growth, produced children in America who grew up with shorter heads, greater stature, etc. Various interpretations have been given these observations, but they probably mean that the biochemical content of the new environment was just different enough to effect the controlling mechanisms of growth. However, this subject cannot be pursued with profit until more data are at hand.

In general, then, it may be taken as certain that in the physical environment are some of the causes contributing to variations in man's bodily equipment, and though we cannot now identify these causes, nor isolate their effects, the solution seems near at hand. One needs but scan the current literature of biochemistry and genetics to be convinced that we are upon the threshold of epoch-making discoveries which will, in turn, lead to a new understanding of racial characteristics.

[1] See Boas in *Senate Document No. 208, The Immigration Commission.*

INVENTION AND THE ENVIRONMENT

As we now know, culture complexes spring from inventions, and while invention is in a way a creative process, it must have something to work upon; it can not make something of nothing. We need not, however, distress ourselves with the puzzle as to whether there can ever be a distinctly new idea, for an invention in the cultural sense is a new relation assumed or observed between old experiences rather than an experience itself. When one claims that all concrete experiences involved in such an invention must come from the environment, he is on indisputable ground. Thus it is undoubtedly due to the presence of snow that the Eskimo invented the snowhouse and to experience with birchbark that the Eastern Woodland Indians devised the bark-covered tipi. The real problem is as to whether there is anything in the very nature of birchbark as a part of the environment that necessitates the invention of a certain peculiar kind of house. Unless one holds to an ancient belief, he must assuredly say that there is no such necessity. It is true that a person who never experienced birchbark directly or by hearsay could not have made the invention, and if he had, it could not have passed into practice unless the material was made available by the environment. Thus it is clear that the environment furnishes the materials from which inventions are made and which thereby enter into the so-called material cultures of peoples. But the essential thing in an invention is the relation between experiences. In the case of birchbark the relation between bark experience and house-building experience can have no existence outside of the psychic life of man; the environment can lay no claim to it. Its production must emanate from the human mind and not from the earth. It seems, therefore, that we have here an answer to our query, for by the nature

of the inventive process the determining factor is found in mental activity. Environment furnishes the materials and in that sense only limits invention. To invent a birchbark-covered house a man must have lived among birch trees, but the mere living there does not require such an invention.[2]

We have noted that an invention becomes a cultural trait when taken up by many individuals and that the causes leading to the adoption or rejection of an invention must be recognized as the chief factors in the determination of culture. But as we have seen, they are selective only and not real producers of new things. So, as in the previous discussion, our quest for the producer ends at the threshold of the inventive process.

Many of the factors entering into the choice of the tribal group are now familiar to us as prejudice, tradition, the function of the genius, etc. These, it will be observed, are cultural, or human factors, and are not due to the environment. Yet when we take material culture complexes alone, it must be recognized that with respect to these, prejudices are less active. The experience of the world is that while a savage will throw away a stone knife and substitute a steel one after the first trial, he will be very slow to change a religious practice and especially a social custom. We may expect, then, greater opportunities for the socialization of material inventions and that industrial progress will be more rapid. But there is a fallacy here, for while it is true that a savage will quickly substitute a steel knife, it will be otherwise if one of his tribe attempts to develop the manufacture of knives, or even engages in extensive trade with knives, for then at once there will be a conflict with social customs. Nevertheless, it is probably

[2] For a review of the environment and inventions see Thomas, *Source Book for Social Origins;* also, chapter on Environment in Lowie's *Culture and Ethnology.*

true that most improvements in weapons, tools, etc., will, when demonstrated by the inventor, find little resistance and in most cases positive encouragement. The criterion would then be the usefulness of the new invention. Thus to a roving people a birchbark house might be an improvement, provided birchbark was readily attainable or transportable. Here the environment appears as a selective factor because the adoption of any particular set of traits appears finally as an adjustment between the tribal group and the environment. But, as such, the environment is a passive factor, for the inventions that happen to fit sufficiently well to survive pass into the cultural complex, while the others fall by the wayside. And, after all, we must not forget that the fitness of an invention is a matter of judgment and that many a maladjustment to the environment passes as the superior trait because of an error in tribal judgment. It is truly surprising how ill-fitting the adjustments may be and still give men time and strength to maintain family, religious, and political organizations of considerable complexity. We see then that while an invention must work to survive, there is no guarantee that it will be given a fair trial and be allowed to stand according to its deserts. Its fitness is chiefly a matter of social belief, and as such subject to all the ills and vagaries of folk thought.

In general it seems that the part played by the environment in the development of culture consists in deciding as to what may not become a part of human experience, but that among the experiences it makes possible is a wide range, in fact an almost infinite range, of yet to be discovered relationships among which are many that may enter into the culture of the future, if both the man and the hour come.

THE ETHNIC ENVIRONMENT

So far we have concerned ourselves solely with the material world outside. What we have been speaking of as the environment are features of land and sea, climate, plant and animal life, etc. This is the geographical environment. It is now necessary to distinguish between this and another kind of environment that is afforded by the people we have around us. As individuals we need not be told that the kind of company we keep is of vastly more significance to our lives than the kind of furniture we use. Our very thoughts are created in what we call the social atmosphere, where one mind reacts against another. Here is most certainly the contact between the individual and the culture of his group. This is also to him a kind of environment. But we are not considering the individual, our problem lying in the group and its culture. Yet in much the same way one tribal group will react against another, as we have shown in the discussion of distribution and culture building. Hence, the environment that really counts for most is the ethnic environment, the culture setting. A tribe's location will then be favorable or unfavorable according to its degree of isolation.

We have seen that physical barriers like rivers, mountains, deserts, and oceans, must be reckoned with as tending to isolate cultures, and that in many cases these barriers have proven to be almost insurmountable. Thus, a culture like that of the Patagonian in southern South America had no way of crossing the ocean and coming in contact with other cultures, nor could it keep in touch with other South American cultures except such as were met on its own narrow borders. The fact we have cited as accounting for the great extent and intensity of modern cultures, is that these cultures have discovered means of communication that overcome all these natural

barriers. In consequence we can now travel or fly anywhere with precision and dispatch, we can write or telegraph to the ends of the earth, but it was not so once and certainly was not the case in primitive cultures. Then, it must be conceded, the geographical barriers were large factors in setting the bounds to culture's expansion. All this we have reviewed at some length, but it remains to consider the isolating effect these barriers may have with respect to primitive cultures.

In the first place absolute isolation would imply that no contact of any kind was possible, but that the group was wholly self-stimulating, and so immune to the many factors that tend to diffuse culture ever farther and farther afield. But while the blame for isolation must be laid largely at the door of the environment, such isolation is merely a condition under which culture operates; and from one point of view, the upward trend of culture has been a steady struggle against the barriers of isolation, for we have seen how the speeding-up of culture progress comes with each advance in the means of spreading knowledge. So we now have a broader view of culture, as not only a struggle of man to overcome the physical environment, but to annihilate isolation. Thus it may be that the snail's pace of palaeolithic culture can be adequately explained by isolation. At first, man as a kind of super-mammal, true to his heritage, spread out in small family groups. This much we can be certain about. In these groups culture began its initial differentiations, but how little did one of these groups know of the other! The far side of a range of hills was even farther removed from their ken than is the planet Saturn from ours, for of Saturn we have some definite idea, while there must have been a time when the far hill slope was no more in the consciousness of such a group than were the rings of Saturn in ours four hundred years ago. Even contact with the nearest group must have

been of rare occurrence. One's imagination can complete the picture at will. Perhaps one day a solitary hunter saw game in his own shape; he may have been overcome with fear and fled; he may have fought, or he may have sought to be friendly; no matter, for in either case there would be a mental reaction of an unusual nature. Thus would the first infinitesimal step be taken in the fight against isolation. Again, we must remember that there was yet almost no social machinery, no well worked out formula according to which to proceed when one met one of his own kind. This and the thousand other little things we take for granted had to be worked out before there could be much reaction between these primitive groups of men. And when we clearly sense the almost impenetrable gloom that hung about these early will-o'-the wisps of culture, we cease to be amazed at the infinite sloth of primitive man and stand astounded that these little flickering flashes should ever have kindled a flame large enough to encircle the earth. Truly in the face of this miracle all the wonders of astronomy and chemistry become mere commonplace happenings!

I trust we shall some day know more about the fascinating story of how man surmounted the darkness of isolation and spread the light of culture. Nothing could be more inspiring and educative to us who are now at last conscious of ourselves as having and doing with culture. Things which now seem so trivial to us will then stand out in their true significance. How little thought, for example, do we give to a sandal or a snowshoe in a museum collection. Yet, what must the invention of footwear have meant in increased travel, how it must have pushed back the curtains of darkness! Mark Twain in his *Roughing It* draws a vivid picture of the contrasts between his first trip to California in a stage coach and a later one in a Pullman car, but is this of any greater significance to us than the invention of

an improved footgear to primitive man? The chief difference is that the Pullman came quicker. That it came quicker is, no doubt, because the whole civilized world had a hand in the making; at least the inventor lived in a complex net of world-wide reactions and stimuli. On the other hand, the poor primeval hunter had no help except his few benighted companions. We may justly glory in the fact that the United States produced the Pullman, but had we lived here in pre-Columbian isolation it is a safe bet that no one would have done it. The leaps and bounds, therefore, that so mark the progress of culture in our day are the fruits of the sledge hammer blows of our forefathers against the inky ring of isolation that beset them on every hand. Intrinsically our minds may not be better than the ancients, but there can be no doubt that they function more fully because of the tremendous scope they now have for individual and social reaction. There may be, as students of anatomy maintain, no evidence of important changes in man's nervous system since days of old, but of one thing we can be sure and that is, when we were born, we were cast into a flood of stimuli arising from the culture setting of our time, which is to the surroundings of a cave-child, what a maelstrom is to a quiet pool in a meadow brook. It is the reaction this sets up that tenses up our mental lives and makes us superior to him we call a savage, but for all we know this superiority lies in our culture rather than in our gray matter, for the reactions that produce this result come from the ethnic rather than from the geographical environment. Anyhow, the cave-child was not one whit less enveloped by the geography of his locality than were we. So the import of this discussion is, that there is no basis for assuming that the contrast between ourselves and cave men is due to differences in the physical environment, but that there

is sufficient ground for regarding it as arising from the differences in cultural environment.

Finally, we see once again how the mind of man rises to meet all situations. Someone has said that Herodotus was the inventor of travel and comparative studies in culture. He did indeed give it something of its present academic stamp, or set a trait-complex pattern that has conditioned everything of the kind in Euro-American culture; but all modern tribal groups seem to have recognized that the one way to overcome isolation is to travel and to explore. Moreover, the trait of going abroad for new ideas is ages older than Herodotus and is firmly grounded upon original nature.

BIBLIOGRAPHY

Boas, Franz. *Changes in Bodily Form of Descendants of Immigrants* (The Immigration Commission, *Senate Document No. 208,* Washington, 1910).

Bryce, James. *The Relations of the Advanced and the Backward Races of Mankind.* Oxford, 1902.

Lowie, Robert H. *Culture and Ethnology.* New York, 1917.

Mason, Otis Tufton. *The Origins of Invention.* A Study of Industry among Primitive Peoples. London, 1901.

Thomas, William I. *Source Book for Social Origins.* Chicago, 1909.

CHAPTER XVI

THE RATIONALIZATION OF CULTURE PROCESSES

If one looks closely into the career of culture, it will be apparent that the chief difference between us and the more primitive groups lies in the degree of rationalization we assume toward the functions of group life. Thus, there was a time when the vagaries of the weather were felt and feared only, but little by little man got his intellect to work on this situation, imagining demons or other personalities as back of it, and so step by step, to our position today where we conceive of weather manifestations as mere phenomena of nature, to be dealt with in a scientific manner. Another good example may be seen in our attitude toward disease, which is now treated as a scientific problem in contrast to the magical practices of primitive man. It appears then that the evolution of culture has proceeded by the rationalization of habits based upon inborn qualities, or behavior. The accumulative quality of culture which is responsible for its augmentation and to which we have attached so much importance, is but a necessary correlate of this rationalizing principle. So in our culture few phases of life have escaped the thinker and the increasing momentum of accumulation is now carrying us along with startling rapidity, so that religion, marriage, and even the most intimate affairs of life are bared to this penetrating light. Here lies the significance of the term primitive, for those cultures are primitive in which rationalization is relatively weakest. They are slackers in culture, who have slunk back into the by-ways of isolation. They

have not stood still in so far as the content of their culture goes—it may be doubted if culture is ever truly static—but in the matter of rationalization, they are on the chronological levels of past ages. In this sense, the term "primitive" is fully justified.

So far in the world's history, this rationalization of functions has been directed rather to the adjustment of the individual's original nature, or innate equipment, to his surroundings, cultural and otherwise; but the rise of history, sociology, economics, etc., indicates a movement toward a different kind of rationalization in that its object is the group rather than the individual. The thing we are now striving for is the rationalization of the culture function as a whole. The evolution of the individual is conceived of as passing over from the level of instinctive behavior; and now we see that this movement has gone so far in Euro-American culture that we may expect the next great step to be the rationalization of all social phenomena, or culture.

The great World War of our day has hastened the event by turning the eyes of all to culture. Even the term culture soon found its way into the average vocabulary, thus furnishing the basis for a serious inquiry into the nature of the phenomenon. Fortunately, there is at hand a considerable body of knowledge as to the various types of culture in the world, the anthropologists having already worked out the chronology of man in Europe where he first appears with a culture of the most primitive sort. Furthermore, anthropology is the newest of the sciences, for at last, man, having made such great progress in the rationalization of his specific acts, turns his rationalizing powers back upon the essential phenomena of culture. So, conceiving culture to be the expression of the most distinctive phase of man's original nature, anthropology seeks to comprehend and formulate the modes and conditions of this expression in just the

same way as we now deal with other phenomena. In other words, we may expect eventually a people who handle their culture just as effectually as the most enlightened of us do sanitation, diet, etc. We may surely expect this, because such a trend has so far marked the whole range of culture history and nothing short of a complete reversal of the process can prevent it. So, as a people, a tribal unit in the larger sense, our ideal should be to hold and conserve our culture, for it is our most priceless possession. Of course, we should not seek to hold it stationary, but to preserve our cultural youth, to go forward in our evolution to the highest possible level of culture. A fixed culture is a dead one, in this or any other age. Our ideal aims rather at a condition that will give each man or woman the fullest measure of culture. In consequence, it is of the greatest moment that we arrive at a knowledge of how culture moves, and it is the application of this knowledge which we here speak of as rationalization. So to take a rationalistic attitude toward culture, one must first become fully aware of its existence, and seek to understand its processes. Then with each advance in such knowledge will come increased control. Yet in no case are we to expect that man's original nature will cease to function and be displaced by an age of pure reason. The rationalization we have in mind is increasing direction and control of native behavior, and not its abolition. In other words, when man comes into even a partial understanding of what culture is, he will have achieved another advance in reflective thinking, and thence begin to manipulate, not merely isolated individual behavior, but group behavior. It is with such reflective activities and their consequences that we are concerned in this chapter.

THE CONCEPTION OF CULTURE RIGHTS

As we have had occasion to say over and over again, culture began with man's reflective thoughts. By reflecting upon tool-using experiences he formulated methods of procedure and by again reflecting upon this very process he came to the notion that in mechanical invention is to be found the solution to the problem of existence. But he also reflected upon this reflection and its relation to himself until he reached the position that personal material betterment was a very desirable line of action. From this the step was easy to the idea that everyone was entitled to such betterment, or that he had rights in this respect that could not be transcended. Yet while it is true that all peoples, even the most primitive, do reflect upon experiences, still there is no good evidence that systematic reflective thinking upon the individual and the state ever led to a definite formulation of the concept of inherent individual rights, except among European peoples and, at that, less than a thousand years ago. We need not trouble ourselves with the question why it happened thus, or the objection that it is of no significance, because if there had been the same oppressive system of government in other parts of the world the peoples so oppressed would have come into the same idea; for in last analysis such questions take us back to the discussion of racial values. And our point now is that the idea is a distinctly modern one, and that whatever the reasons may be, it took the world a long time to get to it and then it was only in the area of central, or higher, cultures that it developed.

From what historians tell us, we infer that it was the reflections upon this idea of individual rights that abolished slavery. And it took the world a very long time to do it, in fact, we are far from rid of this abomination yet. Moreover, if we read history aright, the Old

World pattern of empire carried a slave foundation. Thus the rule of Athens, which is often held up to us as an ideal state, was based upon a colossal structure of slavery, concerning which someone has said that what the historians usually permit us to see is the gilded apex of a pyramid of oppression and degradation. However unjust this characterization may be, there can be no doubt that, though the small group of upper-class Athenians looked upon each other as individually equal, they ruled the masses and slaves with a ruthless hand. The reader may recall that famous classic, Plato's *Republic,* which is nothing more or less than the formulation of the Athenian notion of what a state ought to be. As a book it is a remarkable production and no other discussion of the same problem from that day to this has ever risen to the same level of literary excellence. Yet, with all the genius and high-mindedness of his time, Plato never for a moment imagined a state without slavery, and it is safe to say that no Greek ever questioned the necessity and the right of the strong to enslave and grind down the weak for their own selfish ends. Slavery was taken as a natural condition for social life, in just the same way that we conceive of air as a condition for organic existence. What Plato reflected upon was not the lot of the poor slave, but of the few who ruled. To him the important matter was the rights and individual fortunes of the members of this small group.

Why the Greeks never questioned slavery is not difficult to see. Backward from their day as far as the historian can trace, the conditions were the same. Society in Crete, Egypt, Chaldea, and all the rest was built upon this one pattern. Further, the system is firmly fixed in the traditions of Old World peoples for whom we have no real history. If, therefore, we look at the historical perspective of slavery, we must assume

a hoary antiquity for the system. Again, since it is one of the fundamentals in the state pattern that prevailed almost down to our own day and time, we have good grounds for assuming it to be even older than the first great empire of Asia's unknown history. So we suspect that long ago in a society where slavery had been developed to a workable basis, there arose a genius for empire building which set a pattern and set it so well, that it was many thousands of years before anyone found good grounds for questioning the fundamental assertions and ideas underlying this system of government. It is curious how successfully our historians have dodged the important problem of the origin of slavery and its function in the formation of these initial empires. Some of them are even so naïve as to assume that slavery is a mere state of nature with which mankind was cursed by some trick of his creation and which he has been at infinite pains to get out of his system. Fortunately this is not true, for unless there are miracles of heredity, we can be sure that if slavery was instinctive, or inborn, as a part of man's original nature, it would be with us still. It is hard to excuse such a blunder in a historian, for slavery is just as much an institution as citizenship. In other words, it is a phenomenon of culture. We suspect that some day the historian will see the light and begin the investigation of some of these fundamental institutions out of which the first Old World empire-pattern builder wrought his epoch-making scheme of government.

But, if the historian can give us no light upon this subject, the anthropologist can. He finds that the Old World conception of slavery is not a universal feature of primitive society. Hence, though this Old World slavery is certainly older than the empire system, it cannot be so very ancient when we look at it as an event in the whole history of culture. The simpler and more

basic parts of culture, as fire-using, spirit ideas, etc., must be of vastly greater age than this slave system.

Yet, if the historian has not bothered with the origin of slavery, he has given us a lucid account of the struggles for the realization of the democratic ideal. Democracy is conceived as a social principle based upon the theory that all men are equally worthy, or that they all deserve an equal chance. This conception is largely an outgrowth of Christianity. Thus, it came too late for the Greeks. In fact, it is not until the seventeenth century that this principle begins to assert itself. The greatest progress was in England where first and most effectively was evolved the principle of popular participation in government through parliamentary and constitutional procedures. Yet it remained for America to go one step further by throwing over all hereditary titles and rights, but even here she was merely following her old English traditions.

However, the most important step was that of which Bacon was the exponent and which we have already considered, viz., the individual becoming fully conscious of his assertive position in the state and of his ability to ameliorate his condition by scientific discovery. All this comes with the formulation of individual rights. It is truly strange that it took the world all this while to get to that idea, but if we should follow the history of man's reflections upon social matters, the devious path by which he at last attained this notion could be seen. That it is not a straight and direct one indicates that we are dealing with a historical fact, or a recital of the varying fortunes of men. Culture is accumulative, as we have seen, but nature, or whatever power is at work here, knows nothing of modern efficiency, else should the Greeks have made the step, instead of allowing the world to backslide for some two thousand years.

So it came about at last that the important problem

was the conserving of the individual's rights and of so adjusting the machinery of the state as to give these rights their full function. No other subject has been so persistently agitated during the past two centuries. One after another hereditary offices have given way to democratic choice and in the wake of all has come the elimination of sex distinctions. Yet the important feature of this democratic movement is the emphasis it places upon the individual. It is the assertion of the individual, conscious of himself as such, acting upon his own rights, that is taken as the principle of political action. This is clearly shown in the period of the French Revolution, with its conception of the state as a contract with the individual, a notion that the state could only exercise such powers as the individual chose to delegate to it, and, what follows as a logical corollary, that the individual can call back these powers at will. All these points are far better presented in sociological literature than they can be here; we only mention them to get before us the position of the individual in the democratic movement. This is, in substance, that the individual is conscious of himself as an individual in a society. More than that, he is conscious of the fact that he is progressing and of the means and manner by which that progression can be made rational, and so be directed. Thus, it was an easy step from the realization of the individual to the conception of society and to the assumption that society itself could be rationalized and directed. Such a consciousness of ourselves functioning as a group is coincident with the rise of sociology as an academic subject, and whereas a century or more ago men were thinking in terms of the individual, they came during the last half century to see themselves in society. It is then a curious fact that for a long time man was so intent upon his individualism, he failed to sense the existence of society, and that to such a thing as culture was totally

blind. But we have seen how our people are just becoming conscious of the existence of culture and of themselves as participating in culture. So while we have attained social consciousness or the conception of a self-realized society, into culture consciousness we are just now groping our way.

Our awakening is largely due to the shock of the European war, for the threat of the enemy to stamp out the culture of the Belgians, the French provinces, and even of England and America, set mankind to reflecting upon the nature of culture and its relation to the individual. For the first time in the history of the world men began to think in terms of culture and, so, little by little we are evolving a conception of culture rights. What we were really fighting for in the late war was the right of Belgium and every other country to possess and to cherish its own culture. It is also highly characteristic of all great advances in culture, that though the position of the world as to such rights is quite unanimous, there has been a lot of fumbling in the formulation of the concept. The prime difficulty lies in the universal ignorance of culture processes and the consequent inability of our leaders to understand the new responsibilities thrust upon them. This is why we have been to some pains in this discussion to get a view of culture as a whole, for this is the only way by which we can attain a true perspective of people in culture and their rights to the same. From this vantage ground, where we see culture as a form of human behavior and realize it to be a growth augmented by the reflections of man upon past performances and experience, it becomes clear that the declaration of culture rights is a stand for the freedom of each people to protect and ultimately to direct the development of their own culture. This was the import of Woodrow Wilson's historic message, with its proclamation of culture freedom as the battlecry of

progress. Unfortunately, this great statesman, like Akhenaten of Egypt, lived before his time. This new idea did not fit into our old political patterns, so the door was slammed in its face. But so far as we can see, this is the fate of all great ideas destined to become trait-complexes in cultures. Consequently, we may look forward serenely to the day when all peoples shall have rights to their culture, based upon the facts and conditions of culture and not upon the conveniences of relatively few individuals. In the same sense that the world rose out of social gloom when it came to see the position of the individual, it is now ready to take one step more, the consciousness of itself as having and developing cultures, and in meeting the challenge of the future by the formulation of culture rights.

CULTURE AND INTERNATIONAL RELATIONS

The recognition of culture rights and the obligations thereby imposed raise new problems in statesmanship and international procedures. History has for long been held up to us as the one source of guidance in world affairs, but, indispensable as it is, history alone has rarely given its devotees the needed insight into the questions at issue. It deals largely with the personal element, the mental and material technique of the leaders in the struggle, rather than with universal human behavior and culture processes. Yet, as we now know, these last are the fundamental factors involved, and so it is obvious that a clear understanding of culture and its processes is one of the essentials to the improvement of social conditions and the amicable adjustment of international differences; and although anthropology has so far gone about its affairs with no thought to the consequences of its findings, it is impossible to ignore the universal call for more practical insight into our origin and behavior.

The demand is insistent, nor is there any reason to doubt but that the future rests with those who are culturally wise. In a well ordered community men walk the streets in confidence because they know and respect the individual rights of their fellows; but with all our enlightenment we are still trying to walk abroad among the cultures of the world, ignorant of the rights of the other fellow. Under such circumstances it is idle to expect the immediate abolition of war and its mechanisms. What we need, then, is to initiate the systematization of our present knowledge of culture and apply to current problems the principles so formulated. This is not the place to take up such practical problems, but we may deduce a few principles from the conclusions so far attained. The beginnings of every applied science are necessarily marked by the formulation of such principles. The reason why anthropology has been so barren of social results and so unappealing is that it appears little more than a maze of detail, no attempt being made to reduce the data to terms of behavior or to relate them to current events. So as a suggestion as to what might be done, we shall set down a few of the most obvious inferences.

For example, the term race, as used in general conversation and in newspaper discussions, implies kinds or classes of men. This is simple enough, but human beings are classified from many points of view; as, according to their dress or undress, by the languages they speak, by their habits and customs, etc. And it will be noted that these classifications are based upon the most obvious characteristics, or those that first strike the observer, and further that they are not biological at all. If, for example, you are asked to name the racial group characterized by low stature, broad shoulders and stocky bodies, straight black hair, long heads, wide faces, small eyes, etc., you are puzzled. But if mention is made

of snowhouses, harpoons, dog sleds, etc., even our children will answer, *Eskimo*. Thus, while it is obvious that the unique characters come into our minds when one begins to think in terms of human groups; the most dominant of these characters are habits and customs. In other words, *the outstanding impressions one people entertain of another are, for the most part, based upon their cultures and only to lesser degrees upon their anatomical characteristics.*

We know, further, that the attitude one group takes when confronted with another will depend upon their reactions to observed differences, and since matters of culture seem to attract attention spontaneously, it is to knowledge of culture that one must look for guidance. Leaders and administrators in Euro-American culture are often called upon to deal authoritatively with more primitive cultures, and when faced with such a responsibility they should want to know what kind of behavior to expect from a particular group. Nor would it matter in the least that, in the main, the behavior of the group was acquired rather than inborn, for it would be with the reality of this behavior that one must deal, with what it is *now* and not with what it might be. The writer once visited a United States Indian Reservation to which a retired army officer had just been assigned as Agent. His greeting was, "You are just the man I most want to see. Where can I get some information as to who and what these Indians are?" When it was suggested that the Department under which he worked could supply the information, the retort was that, "They know nothing about the habits and thoughts of these people." No doubt he was correct, yet the responsibility of guardianship for these Indians was placed upon a single individual, without a definite notion of what was to be guarded. But this is almost equally true of all dealings with subject groups, from the beginnings of conquest and the exaction

of tribute up to the present moment and we may suspect that many wars and other disasters have resulted from faulty data as to the cultures of the peoples concerned.

Again, international relations often hinge upon the spread of cultures and the preceding pages indicate that cultures tend to expand, or diffuse themselves where environmental conditions are the same; so also, *a racial group will tend to migrate or to invade areas like its homeland.* With this in mind and a map of the world in hand, the reader can begin to forecast some of the next moves in history. If an insular people is noted, living on islands and so thinking in terms of islands, they will be reaching out for other islands, and wherever there are such lands presenting environments similar to their own, these will be continually before them as spheres of interest. Further, unless these new lands are congested with populations, infiltration will begin, or the insidious flow of blood into the new potential home. If the culture of the prior population is very much like that of the newcomer, and their blood is similar, then the only problems are those of national sovereignty and of population limits. But if the differences in blood are great, the disparity of culture wide, or both of these divergences exist, then as soon as the balance of numbers is approached a struggle is inevitable. Further illustrations are unnecessary, as the reader can work them out for himself.

Another important principle is that *each tribe, or true national unit, regards itself as superior to all others and holds its culture to be the best.* We have commented upon this before, so that no further explanation is needed. It means that all such groups are to be met upon a level of assumed equality of worth. Notwithstanding the obvious soundness of this principle, would-be statesmen often proceed as if the opposite were true and then express surprise that their good intentions are resented.

Further, an individual once fully conditioned or adapted to the culture of his homeland will rarely put aside his loyalty to it, even though he adopt another culture and take on a new allegiance. When the crisis comes, he will be moved to stand by the culture of his fathers.

Closely related to the above is what we have called a protective response, *or the tendency of a group to regard its culture as synonymous with its life.* There is reason to believe this to be inborn and, if so, it cannot be eradicated. Those who have the responsibility of dealing with independent national and culture groups should bear this in mind, for the reaction to a threat to trample upon a culture is about as inexorable as natural law. Now, the importance of such principles lies in their value as cautions against blundering into a position that leaves the other group no recourse but to fight.

Still another corollary is *that when a group comes into a new solution to one of its important culture problems, it becomes zealous to spread that idea abroad and is moved to embark upon an era of conquest to force the recognition of its merits.* To take an example near at home, our forefathers set up a new form of government which they regarded as the best yet devised, and so they called upon all the oppressed of the earth to come to our shores to share in this blessing; but in addition to this peaceful proposal our nation has from time to time risen to demand that similar governments be set up elsewhere, and has always shown zeal to topple over the governments in more despotic countries. Also, something of this kind was manifest in the French Revolution when the devotees of the new order flew to arms to confer their blessings upon all mankind, and today we see the new government of Russia threatening to take up arms to force its ideas upon an unwilling world, for what they regard as the regeneration of mankind. Such international situations may develop at any moment, but

no statesman can deal intelligently with them unless he comprehends the nature of the force that is behind them.

The setting in a culture area is especially favorable to the usurpation of power by one of the tribal or national groups near the center; hence, if war is to be avoided in the Euro-American area, means must be found to discourage militarist ambitions among the strongest nations. For instance, when the Atlantic seaboard was being colonized, the French and English came into conflict with the Iroquoian Federation, an association of Indian tribes then rapidly building up a military machine. According to tradition the five original tribal groups living side by side, fought each other for ascendancy until some great genius reflecting upon this situation developed the idea of a league and from this evolved the famous pact of the so-called Five, and later, Six Nations. But this league entered at once upon wars of conquest, and levied tribute in men and goods upon the surrounding tribes, in the manner of all military powers. Elsewhere, at a number of such marginal centers of Indian culture the colonists found analogous struggles developing, but this is in no wise different from what was happening in other parts of the world. Thus, in the Hawaiian Islands, there were originally a number of independent tribes, but eventually these all came under the control of two strong war-like leaders, one of whom was conquered by the other. In Africa also, we see the rise of native negro kingdoms by the same steps. In every case the primary struggle is between the few groups nearest the culture type for the area. Even the late World War was such a struggle, and though the attempt was made to bind the few largest nations in a pact to keep the peace, one of them refused to be bound and since this was the strongest nation numerically and materially, the conditions are extra-favorable to another struggle for military supremacy.

So the great problem in Euro-American culture is to meet this situation without becoming in the end a prey to militarism. It is for the United States, in particular, to ponder deeply over the laws of culture and the ultimate consequences of the positions now being taken by her statesmen, who for the most part are as ignorant of these principles as of what goes on in Mars. Yet even with the clearest insight and the most rational of procedures, the avoidance of such a fate will be no light task, since we observe that everywhere in the world the tendency has been for culture areas to develop dominant centers and then to become the seats of militarism. However, there is reason to believe that once the leaders of our great nations become fully aware of these facts, they will be less inclined to hazard all in the fortunes of war.

A number of other applications will readily suggest themselves if one reviews the preceding chapters, but as this is not an essay in applied science, we forbear, since it is now clear that in all international affairs questions arise that will be far better understood if looked at in the light of culture processes. Nor do we need to go abroad to find use for knowledge of culture, for at home, in our own land, are problems arising from the various culture complexes, each of which must be thoroughly comprehended, if intelligently handled. Yet even these often rise to the level of international questions as will be seen in the succeeding sections.

LIMITS TO POPULATION

The dominant thing in culture seems to be the culture center, which in turn we have seen to be the nucleus of an area. The great civilizations of the past were such centers, but they were also the centers of populations. Naturally, we do not have very satisfactory census figures for Egypt, Babylon, and Crete, but the as-

cendency of each seems to have been accompanied by a rapid increase in population, and its fall by a decline in population. Just how the life history of a center is correlated with the fluctuations in population we are not able to ascertain with precision, but from what we now know of culture, a good guess can be made. In the discussion of economic cycles in tribal life, we saw how man tended to exhaust the natural resources, his fortunes rising and falling accordingly. We have also noted the appearance of a balance between food supply and population, into which we can now go with greater detail. Observations on Eskimo life are especially illuminating, because it is clear that the tribal groups among these peoples were as large as the environment would support. For example, there is an island in Hudson Bay, known as Southampton, formerly inhabited by a tribal group of Eskimo. Occasionally whalers visited them and from the information they give, it appears that these islanders had a well balanced life, except that every now and then there was not enough food, so the surplus population starved. They were too far from the mainland to engage in trade, and so there was no temptation to do what the white settlers of Long Island did; but eventually that temptation came. An enterprising whaler, with a large steam vessel, appeared on the scene, armed all the able-bodied men with rifles, taught them to shoot, and offered liberal prices for skins and oil. For one season these Eskimo prospered as never before, they became rich in goods, and when at last the ship was loaded with spoil, it weighed anchor and sailed away. Then as winter came on, the hunters with their new weapons found game exceedingly scarce and at last there was nothing to kill. No one knows the details of the tragedy, for all the returning whalers found were the bones of the once happy islanders. Yet this sad event is but an exaggerated version of what was happening

over and over again along the whole Arctic Coast. Everywhere the Eskimo lives up to the food supply. The Indian hunters of eastern Canada and the corresponding parts of the United States were also in a state of equilibrium, a special student of the subject having shown that from two to four hundred square miles were required to feed a family, and that the population was at the maximum level. So in general, it appears that all hunting cultures, long sustained, show such a balance between the fauna and population. If too many game animals are killed one year, a proportionate number of persons starve during the next.

As we have noted elsewhere, time and again some wide-awake tribe hit upon ways of conserving and increasing the game, by domestication, for instance, or again, by shifting to some new resource, as by agriculture. In this way they raised the limit to population and expanded accordingly. All this is an old, old story, but we now see it in a new light. The law seems to be that the population responds quickly to the food limits, and each advance in culture appears as a raising of the population limit in proportion to the efficacy of the new techniques for sustaining life. Notwithstanding his long period of infancy, man can reproduce rapidly; a single pair living to a normal old age, theoretically considered, could see the birth of more than four hundred descendants; actually, the average will be much less, varying with the food conditions. So we need not be surprised to hear of great spurts in population, especially at the centers of culture, for though this law is most in evidence among primitive hunters, it is still operating. The recent great famine in China, no doubt rightly attributed to a drought, is after all a readjustment to the margin of safety. No one, even in the favored districts, had food to spare, for in the whole of that vast territory the people have been for long living up to the balance. We

in America who have lived in its golden age, when there was food for everyone in great abundance, regard it as strange that the lore of all peoples is filled with tales of famine, for we cannot comprehend how such a condition could so often come about. Criminal, ignorant carelessness, we say, and dismiss the subject. But in the history of the race famine is the recurrent condition; everywhere the wolf is lurking behind the door, biding his time. It could scarcely be otherwise, for were the food supply multiplied a thousandfold, the garden spots of the world would ere this have been reduced to "standing room only." The situation may be formulated then, thus; there is no limit to population, except that set by culture and ultimately by the environment.

In the chapter on domestication we saw reasons for believing that culture itself played tricks with man's body and its functions, in surrounding him with ever changing conditions. If we are correct in the foregoing interpretations, then every advance in culture should afford an increased opportunity for the laws of variation and heredity. The rapid expansions and the occasional absorption of new elements, would naturally lead to a variation in the biological group and possibly to an increase in genius. But the ultimate result will be overpopulation, or congestion. No one yet knows just what happens to culture under these conditions. Some students of Chinese history have suggested that the apparent stagnation of culture in China is due to congestion, not only because an inordinate part of one's time is taken up with food getting, but also because the people are so packed together that no one has an hour to himself for reflection and the cultivation of individuality necessary to invention. Obviously, in times past it was different, as instanced by the long list of epoch-making inventions contributed to Euro-American culture by the Chinese. No doubt there is a great deal of truth in this,

for there must be a density of population just sufficient in proportion to the form of culture to give the mind of man its best chance. On the other hand, the case of China seems to be exceptional, for many of the other great centers seem to have kept their number down by war and colonization, whereas China has for centuries pursued the even tenor of her way, doing her best to keep up to the inexorable limit set by food conditions. Time and again the advocates of war have pointed to such congestion and stagnation as the consequence of pacifism. While the facts as to China cannot well be denied, we lack the necessary data to analyze the situation in Egypt, Babylon, and even for Greece and Rome; but what light we have on the subject rather points in another direction. Thus, in our consideration of the wilder peoples we saw how it was from these that new masters came to old centers, and so from time to time rejuvenating their military machines; but the probabilities are, that much as in Rome, the fighting men were largely drafted from the less typical subject peoples of the culture area, and that the population of the center was not greatly depleted. Further, there is every reason to believe that an increase in population must necessarily go hand in hand with the growth of a center. The elaboration and numerical increase of trait-complexes we have seen to be a form of specialization and to carry out such a scheme requires far more than the ordinary few hundred that make up a tribe under primitive conditions. So it follows that, if the theory that culture advances are due to exceptional and rare individuals, distributed according to the law of accident, is a true statement of the case, then the increase of population that comes after an important advance in the exploitation of natural resources, will in turn produce more accidents of genius and so speed up progress. That this does follow, the data of history suggest, but it is easy

to overestimate the importance of genius, since, as we have seen, there is a frightful mortality among new

FIG. 17.—The Spread of Euro-American Culture.

ideas. Further, the increase in numbers and the multiplication of the technique of culture, especially when its best minds are engaged in directing the affairs of the

whole culture area, as in the ascendency of militarism, seems to reach a limit at which the entire complex breaks down, but so far as can be ascertained such a crisis does not come until the industrial-feeding-complex is overreached.

What then is the problem that confronts Euro-American culture? As we have noted, there is an inborn drive within us to preserve and promote it, as by bending every effort to lower the death rate, to ensure long life, to increase well being as we should, no doubt. Yet, this means a greater increase in numbers and a nearer approach to the starvation line. One of the time-honored methods of solving this problem is to expand into new and virgin territory, but there are no more such territories in the world. We must, therefore, soon do as China has done, crowd up.

Students of economics often point out that the present great centers of our culture are the great coal areas of the world, the inference being drawn that coal is the determining factor. If we look at this from the point of view assumed in this volume, we see a great truth in the proposition, for it is a rule in culture that great trait-complexes will be built up around some one or two phases of the environment. Coal is certainly one of these, and a little reflection will show what a wonderful series of trait-complexes are built upon it. Again, we saw that a type of culture tended to spread over regions in which were to be found the natural resources upon which their dominant complexes were based. So the tendency in Euro-American culture should be to spread to the great coal fields of the earth. As we have said, this is what is happening. The great areas of dense population are England, Belgium, Holland, France, and Germany in the Old World and northeastern and central United States in the New; these are also the great coal fields of the world.

From a recent publication we may quote the gross tonnage estimate of the world's coal in relative figures, each value in the table to be multiplied by ten to the ninth power.[1]

United States	3838
Canada	1234
China	995
Germany	423
England	189
Siberia	173
Australia	165
Scattering	920
Total	7937

It should be added that the scattering tonnage is, in the main, adjacent to the European center. Thus, it will appear that already Euro-American culture embraces practically all of the coal lands except those in China, or about seven-eighths of the whole known supply.

Probably the first thought to come into the mind of the reader will be that the discovery of new coal fields may be expected. This is not impossible, but usually considered improbable, except as adjacent to the above centers. For one thing coal seems to lie along the region of the 50° isotherm. But this has another peculiar significance, for it was not coal that first took the pioneers of Euro-American culture abroad. They followed the 50° isotherm belt, or the environment of their homeland. It was later that this culture evolved into the use of coal, England being the initial center of origin for the fundamental trait-complex. Recalling now the priority value of such a trait and the wonderful capacity of such an innovation to condition the complexes to follow, we see that the foundation to England's great-

[1] See Taylor, *The Geographical Review*, vol. 12, pp. 375–402; Loria, *Economic Foundations of Society;* Ries, *Economic Geology.*

ness as well as the specific pattern for the industrial complexes in our own culture were laid when the custom of burning coal was established. The "age of steel" is a misnomer, for it is coal that makes steel; so the iron age has closed and we are now in the age of coal.

Returning now to the future of Euro-American culture, we see by the table that more that half of the world's coal is in the United States and Canada and the bulk of this lies adjacent to the northeast quarter of the former. If, then, culture follows the rule of the past, this section of the United States and adjacent Canada will be the ultimate center. In Asia, China holds the key to the situation, but by land she is marginal to Europe as a coal area, and so we may expect her also to become more and more marginal in culture as she develops her coal fields. So the duration of Euro-American culture is assured just so long as the coal return is equal to the increasing demands upon it. But hand in hand with its increased consumption will go increase in population, the latter in geometric ratio. The reader can readily foresee the result; in terms of history, the era of diminishing returns is not far off. Nor is it necessary to point out the obvious steps that should be taken, if we desire to give our culture the great chance. Some would have us believe that our greatest peril is from dark races seeking to rob us of our coal, but this is a trifle compared to the wolf lurking behind the door.

CONSERVATION OF THE ANCESTRAL STOCK

In addition to the problem of excessive numbers is that of preserving the stock. The one outstanding fact is that Euro-American culture exists among the white races and that the centers are held by Scandinavian, German, French, Dutch, English, and Scotch peoples. As everyone knows, the bulk of these closely related groups appears around the Baltic and the English Chan-

nel and it is from these peoples that have come those who hold the great coal center of America, or of the world. But turning back to the beginning of modern history we see northern Europe populated by a number of tribes contending with each other for room and ascendency. Even the British Isles were once occupied by many such groups. Such a condition of affairs is what seems to have prevailed in every primitive culture area, for, as in the New World where we have the most complete data, the tribal units of the area, and particularly those of the culture center, were more or less at war. Many writers insist that war is a modern institution, something that goes with civilization; but they are confusing organized militarism with its fundamental base, individual and group fighting. It is also a common idea that war is entirely for plunder, and there can be no doubt that material gain is an objective of systematic conquest, such as we have considered at length, but when we get at close quarters with primitive conditions we find that it is not the material gain that lures, but the joy and satisfaction of heroic deeds. In his famous essay on war William James pointed out how deep-seated was the feeling for the glory of conflict. We can, therefore, assert that inter-tribal war is universal and that the contending of the old north European tribes was nothing exceptional. Nor is the struggle ended yet. We see, then, that Euro-American culture is a growth from the cultures of these old north European tribes, and we can assert with confidence that they occupied a primitive culture area, characterized by trait-complexes adjusted to the environment. Further, whatever their remote antecedents, they constitute a division of mankind, known as the Nordics, and since it is among these peoples that we find the blond hair and the blue eye, they are popularly known as the "blonds." Many interesting biological problems are presented in these excep-

tional characteristics, for information upon which the reader should turn to the appropriate literature, the point of present interest to us being that this Nordic stock is the producer of Euro-American culture.

Further, the spread of Euro-American culture has been greatly accelerated by colonization and missionary efforts, and these, being world-wide, brought the Nordic peoples into contact with every variety of culture and race. It is therefore inevitable that attention should be given to the significance of blood and that the defense and promotion of Euro-American culture should be looked upon as also a conservation of the Nordic stock. So in recent years the menace of over-population has greatly stimulated thought along this line, because as a matter of self-preservation the Nordics must maintain a position of relative weight in numbers. As we have remarked once before, all such questions develop passionate controversies and so it is that the real issue seems to be be-clouded by quarrels among the Nordics themselves as to whether it is English, Scandinavian, or Teuton, or some other variety of the stock that is most responsible for the resulting culture, and so most deserving of preservation. Yet this is but a family quarrel for as to the desirability of conserving the native stock there is general unanimity among all Nordics. However, it is not our present purpose to offer advice as to how to achieve ends considered desirable, but to analyze them so as to see them for what they are. Yet to get before us the setting of the race conservation problem we must briefly review the place of the Nordics among mankind.

One's position on subjects of this kind will depend upon his conception of race, a term with whose shortcomings we are now familiar. It is one of those convenient words in our language like instinct, mind, society, etc., the import of which we are certain of until we stop

to frame a definition. Thus, the average person takes it for granted that a race has definite limits and would doubtless say that everyone knew there were Negroes, white people, Indians, and Mongolians; that these were races; that all Negroes were one race, all white people another, etc. This is all true, but when we seek to draw these lines of classification so as to include the whole of mankind, our difficulties begin. For example, there are a great many black people in the world, like the Australians, Papuans, and some south Asiatics, who are far from being Negroes, and just what to do with them has puzzled scientific men even to this day. The truth is that no classification of mankind yet proposed really fills the bill.

In this connection it is well to repeat that what we have been accustomed to is a designation of people according to their geographical positions and their culture. Thus, we speak of the Australians as a distinct group of mankind. They occupy a large island and have one general type of culture and so we speak of them as one people. Had Australia been occupied by two very different culture groups we should doubtless have recognized two groups of people there. Again, we speak of the original inhabitants of New Zealand as the Maori, using their own name, and those of Hawaii as Hawaiians, but we know that these are essentially the same people and that even their cultures were not very divergent. So also we speak of Americans and Canadians. All this makes it clear that the easiest and most practical distinctions of peoples are their geographical positions and their cultures.

Thus, we may never know who were the first settlers in Australia, there may have been more than one such migration, but we do know that for a long period preceding English colonization there had been few visitors to those shores. There was a long period of inbreeding,

the result of which was to level down whatever disparity in stocks there may have been at the start and to reduce them to one family type. As we have shown, this is one peculiarity of primitive groups. It is then fair to conclude that whenever a people have lived in a state of comparative isolation, they will in time develop a physical type of their own. This type will persist until there is an intrusion from without, when there will be assimilation and the whole process begin over again. There can be little doubt that this is a correct statement of the conditions that made mankind what we find it today. Nor can we doubt but that the same process will continue so long as man exists.

Now one can see how hopeless it is to seek for the ultimate ancestral origins of any people; so all we can expect is to arrive at a purely objective grouping of peoples as they stand today. In other words, we must accept their geographical and cultural grouping as primary and then compare them according to their gross anatomical features. This is a technical matter not suitable to our discussion, but we may note the bearing of such a comparative classification upon our problem.

First, the gross distribution of mankind is rather peculiar. Zoologists tell us that we live in the age of mammals, a zoological era that began in eocene time and still flourishes. The chief characteristic of this period has been the appearance and distribution of mammals. We are also told that mammals as a whole seem to have been distributed from an Old World center, the precise location of which may be safely defined as Asiatic. Readers familiar with such zoological literature will recall the distribution maps that have been published showing how the different species of mammals swarmed out of the Asiatic continent and found their way to the outermost parts of the earth. Among these mammals was

man. So far as we know, he was the last, or most recent, of these swarms.[3]

Thus, we are justified in taking Asia as the geographical center to man's distribution. Looking at it in this way, we see a peculiarity in that the dark-skinned folk are in the main farthest from the center while the great main body, or the mass, tends to be light in color. When the zoologists speak of such distributions, they call the edges marginal in position. They also find that the marginal mammals are the most diverse in form and frequently the most primitive. Something like this holds for man, because we find the simple cultured Bushmen in the extreme south of Africa, the lowly Tasmanian south of Australia on the island of that name, and the despised Fuegian at Cape Horn, South America. These are the extreme margins, or out-of-the-way corners of the earth into which these remnants of a past seem to have been crowded.

If we take a general view, as just stated, the Negroes, the south Asiatics, the Malay, the Polynesian, and the American Indian all lie marginal to the Euro-Asiatic continent. In the center, we have the peoples of Europe and Asia, the "white and yellow races." Taking these last as the main body and turning to culture, we see plainly that nearly all the cultures we class as primitive are found among the marginal peoples and those that we regard as enlightened are found with the main body. If we regard cultures only and not people, it is still true that the primitive cultures are the marginal cultures, for the earliest traces of higher culture that history and archaeology can reveal to us had their homes in the very heart of the Old World. And though the centers for these cultures have shifted now east, now west, as we found the center of any culture is apt to do, yet it has

[3] See Osborn, *Age of Mammals,* and Matthew, in the *Annals of the New York Academy of Sciences,* vol. 24, pp. 171–238.

held to a central position. There is, therefore, a coincidence between the marginal cultures and the marginal peoples, and between the central cultures and the main body of people. The correspondence is so striking that one must wonder if the whole phenomenon can be geographical and race have nothing to do with the matter. Students of geography sometimes take the view that it is merely a matter of geography, but this cannot be the whole story, for by this time we know that culture is a human production and dependent upon the cultural equipments of peoples. However, if it can be shown that the Asiatic origin of mammals is merely a matter of geography, then there is no further argument as to the causes for man and culture; but our inquiry takes us in a different direction and we may be content with the observation that culture types do seem to have a distribution coincident to the lines of racial dispersion.

Some of the most promising attempts to classify mankind have taken the foregoing facts of distribution as their points of departure. As zoologists see the case, the marginal peoples are the most specialized in their bodily characters while the generalized type is found in a central position.[4] Thus, the Europeans and Mongolians may be considered the most generalized, though of course, we are now speaking in terms of structure and not of function. The conception of a specialized type is one that has departed widely from the old ancestral form. Further, the idea is that when a type has thus diverged it limits its possibilities for expansion, or its track gets a groove in it. On the other hand, the more generalized type keeps its youth, as it were, indefinitely. We cannot now say if this conception has any significance for culture, but the presumption is that it has, for in a somewhat analogous sense, the cultures of marginal peoples are specialized, or, as we sometimes say, they

[4] Duckworth, *Morphology and Anthropology.*

are "one track" cultures. They are so nicely balanced to serve their functions that they are relatively stable, though not fixed or static. It is true that we often think of our own culture as highly specialized, and from one point of view it is, but yet its breadth and diversity is too great for a specialized unity of action. That there is far greater flexibility in our culture is obvious; it is vastly more adaptable than the cultures of primitive groups. Thus, while we cannot put much faith in this comparison, it does appear that the less generalized part of mankind also manifests the less generalized types of culture. That we have anything new here is unlikely, for we seem to be merely restating the peculiar phenomenon of marginal distributions developed in preceding sections, yet it is from this point of view that we can best visualize the Nordic question.

So it is not strange that books and numerous articles have been written to prove that the fair-haired peoples of Europe are the "salt of the earth," [5] and most readers, we assume, are familiar with all the essential points in these claims. Yet if we look at the problem broadly, as we have endeavored to do with all the other questions raised in this discussion, and recall once more that every cultural group in the world has looked upon itself as superior to all others, we may well pause and reflect upon this case, because the claims for Nordic superiority are made by members of that group. In the main, we have kept away from these questions of value which, as we see, are chiefly matters of group prejudice, but it has been impossible to escape them altogether. Yet, our point has been that if we regard the distributions of culture in the world as a whole, we find certain types which we choose to call higher, occupying a central position. At the present, the center of culture seems to fall among

[5] See Grant, *The Passing of the Great Race,* and Stoddard, *The Rising Tide of Color.*

Nordic peoples, or among peoples in which there is a large Nordic element, as the Germans, French, English, and Americans. But there are other, though minor, racial elements in these populations. Immigration and assimilation have been going on on a grand scale for centuries, giving us in each case a biological complex now difficult to analyze. It would, therefore, be extremely difficult to explain all the facts of Euro-American culture as due to the Nordics.

Yet, good arguments can be made for a definite culture contribution. Thus it seems to have been men of this Nordic strain that gave us the European type of autocratic government and in turn the democratic. Again, in a previous section we contrasted wild and domesticated peoples. Now, there was a time when the Nordics were the wild untamed barbarians of Europe, and their sole ambition conquest and pillage. Little by little, they conquered each other and imposed themselves upon other non-domesticated peoples. They made war and military rule their one business. Yet, it was not the Nordics only who did this; it was, however, a trait of European culture that developed with the expansion of the Nordics. The machine so created ground just as hard upon the mass of the Nordics as it did upon others; but mere oppression is not peculiar to this period or place, for it went on in Rome, Greece, Egypt, China, Peru, Mexico, and everywhere. Under the Nordics, it merely took a slightly different setting, but as we have shown, it is these settings that give us culture distinctions. For instance, the historic setting for Nordic militarism was in the main knighthood. Chivalry was a trait of culture and as such stands quite unique. It may be that it was merely a compromise between the wild bloody life of the barbarian and Christian ideals, but even so it was an important trait of culture, the impress of which is still with us. But chivalry as a

true trait of culture is dead. Yet it was not the dying out of Nordic blood that killed it, but the steady domestication of the Nordic masses under the discipline of the machine that supported chivalry. This taming became so thorough that the wild knights themselves succumbed to it.

However all this may be, the import of our comparative studies of culture history is that no one racial strain, like the Nordics, for example, can lay claim to more than an incidental contribution to culture as a whole. We have seen how culture was in reality a complex, built up by slow and painful accretions; and have noted how the centers for a culture type shifted now from one group to the other. So our clearest insight into the mechanism of culture is attained when we examine the more primitive marginal cultures of the world, for when we then turn to the central culture areas we see the main lines of procedure to be the same. True, historians have chronicled the fortunes of militarism as it raked back and forth over this area, but we all forget that this is only a wave upon an otherwise cultural sea. Such storms agitate its surface and cause it to lash its barriers, but the depths of this sea are calm and eternal.

We are now familiar with the shifting of culture centers, but this is also a shift in race, for in each historic case the scepter has passed on to the hands of a wilder, less domesticated group of people; and since, as stated at the beginning of this chapter, the evolution of culture is no exception to the rule for all evolution, viz., that to the degree to which a culture specializes, the limits to growth are narrowed; and, again, since we found reason to believe that the central cultures were what they were because they were less specialized, it appears that the only way by which these cultures can preserve their flexible qualities is to shift their centers to the less

generalized, or wilder groups. That the Nordics were at one period of history the wilder group who took up the culture movement, must be considered when one comes to evaluate their racial equipments. Moreover, it is probable that initiative and originality are the characteristics of wilder peoples. Americans often impress the Europeans as wild and undisciplined and Continental military leaders once believed it impossible to make an army out of such people. That may be, but from the point of view of this discussion, the Americans are one of the wilder folk. Like all such folk, they are reaching right and left for culture suggestions and working them into a whole. Yet, they may be near the turning of the road where the grim effects of domestication are in the ascendancy. Such seems to be inevitable, but so long as they are a wild people, in the sense we have used that term, they have a future, and though no means are yet in sight that promise to perpetuate fully this youthful attribute of people, the hope of mankind lies in its prolongation.

So the Nordics stand out as the new generation in the family of the world, the hope of the immediate future; it is theirs to carry forward the lamp of civilization, so that when their strength is spent, it may be safely passed to some fresh and youthful hand. Faced with such a responsibility, it would be criminal not to give the best thought of the time to the conservation of whatever virtues this stock possesses. To this end the research of the future should be directed as energetically as it is now to the discovery of new ways for burning up the coal supply of the world, for what shall it profit if we so speed this great fire that the race itself is burned out?

BIBLIOGRAPHY

DUCKWORTH, W. H. L. *Morphology and Anthropology.* A Handbook for Students. Cambridge, 1904.

GRANT, MADISON. *The Passing of the Great Race,* or, The Racial Basis of European History (Fourth Revised Edition with a Documentary Supplement, with Prefaces by Henry Fairfield Osborn). New York, 1921.

LORIA, A. *Economic Foundations of Society.* Translated by L. M. Keasbeg. London, 1904.

MATTHEW, W. D. *Climate and Evolution* (*Annals,* New York Academy of Sciences, vol. 24, pp. 171–238, 1915).

MORGAN, LEWIS H. *Ancient Society.* New York, 1877.

OSBORN, HENRY FAIRFIELD. *The Age of Mammals in Europe, Asia and North America.* New York, 1910.

RIES, H. *Economic Geology.* New York, 1916.

STODDARD, LOTHROP. *The Rising Tide of Color against White World-Supremacy.* New York, 1920.

TAYLOR, GRIFFITH. *The Distribution of Future White Settlement.* A World Survey based on Physiographic Data. (The *Geographical Review,* vol. 12, pp. 375–402, 1922).

TYLOR, EDWARD B. *Primitive Culture.* Researches into the Development of Mythology, Philosophy, Religion, Languages, Art and Customs. 2 vols. New York, 1889.

Researches into the Early History of Mankind and the Development of Civilization. New York, no date.

CHAPTER XVII

A RETROSPECT

In the beginning the men to be were without culture, but they were endowed with instincts that guided their acts as is the case with other animals. Among these was the instinct to seize upon sticks and stones as tools for certain simple processes. Likewise, the play instinct and the instinct of curiosity must have been intense. Also there must have been an instinct to have ideas and communicate them by speech and gesture. But these acts did not yet constitute a culture. So one fine day something happened, whether it was a mere accident in protoplasmic affairs, a true sport, or a mutation, we leave to the geneticists and the Mendelists; but happen it did. This event brought forth a true man. He differed from the others of his kind in but one particular: he had all of their inborn tendencies, according to which he responded to the exigencies of the hour, but in addition he had a new power. He could now, for the first time in the history of the world, reflect upon his own acts. So, we know not when or how, man became conscious of himself as doing things and began to reflect, or think over this remarkable fact. He began to think about the stone he used to strike with and to explain it to himself, painfully slow no doubt, but still persistently. Then he invented, either the method of selecting stones fractured by nature or a method of fracturing them himself. So he went on from one tool to another, to problems of speech, to selection of mates, etc. All these reflections

led to formulations of procedure, childish and brutish in the extreme, but still the greatest achievements that the world had so far known. We suspect that he also began to reflect upon fears and dangers, and his reflections in turn produced new fears, which he projected into nature, and so, little by little, were evolved the complexes of religion, art, and myth, and the whole round of primitive culture.

There soon came a time when he reflected upon the fact that he herded together, or perhaps that he could herd still more and thus increase his security and broaden his life. Out of these reflections, bit by bit, came tribal organizations with all the fundamental functions of government. The next step was to begin to be conscious of the social complex that had thus been created, and to see that it also was a thing that could be manipulated. With this came the comparative attitude, for experience with other groups of men or other tribes is to our mind quite essential to the development of social consciousness, and from this comparative reflection came the assumption of values, the bursts of social pride and the formulation of claims to superiority. Ultimately, reflections upon intertribal strife led some one group to conceive of conquest and subjection. So eventually came the primitive military machine.

All the time this was going on, man's rationalizing powers were busy with every aspect of culture, evolving countless inventions and innovations, thus carrying culture ever and ever forward, but long ere this man had overrun the earth and gathered here and there in more or less isolated groups of tribes, as geographical barriers required. As time went on, these isolated groups became more and more dissimilar, giving us our racial and culture types. Yet these types were not wholly isolated, for many important traits seem to have

gradually traveled around the entire world by mere diffusion from tribe to tribe.

Somewhere, during the age of metals, possibly first in Greece, man began to reflect upon the very reflecting process itself and the nature of what is called knowledge. He began now to manipulate and consciously direct his own efforts to solve problems. Critically and carefully he constructed methods of arriving at the truth and methods of deducing forms of procedure from such truth. Historians say that in this respect the Greeks gave a great impetus to culture, the force of which is yet far from spent. Probably the Greeks were the first to successfully reflect upon these things; anyway, they are the first known to us.

For many centuries after this man went on elaborating his reflections upon all aspects of his culture, thus adding new increments in industry, war, trade, and art. Even society itself was enriched, but the next great step came with the idea that these same old homely methods could be applied to social and moral questions as the basis for social reform. This was barely in the air when the *Mayflower* sighted Plymouth and in fact did not get fully launched until the war of the American colonies with England. Even then it took the subsequent upheaval in France to bring the idea into full recognition.

Since that date there has been in Euro-American culture a marvelous speeding up, due, in the main, to reflections and manipulations with these methods of ameliorating the common lot of man. And now, at last, is coming the consciousness that we have a culture which follows laws and conditions, all of which can be discovered and actions of peoples manipulated to further speed the process.

What the future has in store for us we can but guess. The most obvious fact of all is the progressive accelera-

tion in the triumphant progress of this further rationalization of culture traits. To what speed may it yet attain! If there be those who have misgivings as to whether the nervous system can stand the strain, think kindly of them, for they may be the advance guards of another triumph in reflective thinking.

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